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ABSTRACT

The following papers are included in this yearbook: "Projections and Implications of Social, Economic, and Demographic Changes for Business Education" (Daggett, Branigan); "Preparing Students for Career Changes" (Wells); "Human Relations Skills for the Changing Office" (Harvey); "Integrating Business Education Technology into the Elementary Curriculum" (Milkes); "Integrating Technological Changes into the Middle/Secondary Curriculum" (Fisher); "Integrating Technological Changes into the Two-Year College Curriculum" (Friedheim); "Integrating Technological Changes into the Four-Year College Curriculum" (Clayton, Park); "Teaching Computer Technology for Professional Personal Use" (Barber, Thompson); "Using Technology to Serve Special Needs Students" (Wood); "Selecting and Utilizing Hardware and Software for the Classroom" (Lambrecht); "Economic Awareness for a Changing World" (Manzer); "Linkage of Business and Industry with Education for Business" (O'Neil); "Reinforcing the Basics through Business Education" (Stone, Poole); "Enhancing the Image of Business Teachers" (Scott); and "Implications of Change for Effective Teaching" (Kaliski). (MN)

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Business Education For a Changing World

NATIONAL BUSINESS EDUCATION YEARBOOK, NO. 25

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CHAPTER 1

Projections and Implications of Social, Economic, and Demographic Changes for Business Education

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America's educational system has traditionally evolved from the needs of society. Value systems, societal conditions, the state of the economy, and the needs of business and industry form the basis of our educational programs. This is particulary true in business education, which through the training of new labor force entrants and the retraining of working adults, provides skills which meet job market demands. Education clearly exists in a larger context; and once that context changes, education too must change.

The world in which our students will be working as they exit high schools across our nation in the 1990's is a far, far different world from the one that we are presently typically preparing them for. The society which business education graduates will enter holds different characteristics from the industrial society which existing business education programs were designed for. Programs developed through the sixties and seventies responded well to the needs of business and industry of the industrial era; however, they are no longer appropriate responses to the emerging technological society. Business education must respond to the metamorphosis occurring in society if it is to meet the needs of students and continue to be relevant throughout the remainder of the century and beyond.

The immediate future will be a challenging crossroads for business education. Lingering for the moment at a juncture of old and emerging societal and cultural realities, business educators have an opportunity to build on the historic strength already inherent in our business education programs and to demonstrate that we are on the leading edge of educational reform. In order to do this, it is of paramount importance that business educators look beyond the hallways and classrooms of education programs and grasp the vision at the end of those pathways—the world outside. To prepare students to function well in the emerging society, it is necessary for business educators to recognize the larger context in which programmatic offerings exist and to understand the social, economic, and demographic changes taking place in the United States which have their roots in technology.

A great deal has been written about these changes which are taking place. In *A Nation at Risk*, the National Commission on Excellence in Education recommends that education respond to these changes. Business educators have traditionally recognized the need to change and have responded to that need. It is apparent that they again recognize the need, but find it difficult sifting

through government reports such as the *Occupational Outlook Handbook* and popular press reports to identify exactly what they are to respond to.

Topics such as the "baby boom," "yuppies" and their "puppies," and "trend lines"—which are past labor trends with straight line projections into the future—are reported and analyzed almost daily through various forms of the media. Although they should be taken into consideration, they should not be the focus of the social, economic, and demographic indicators that business educators must look at if they are to respond to the larger context in which education exists.

The emphasis should be on the answers to such questions as: What jobs will exist in the future? Where will the jobs be? What skills will be needed for those jobs? What skills will be needed to manage one's personal life? What needs will students have? What changes will be necessary in educational systems and programs to meet students' needs? What implications will these new demands have on classroom teachers?

The answers to these questions, however, are imbedded in the social, economic, and demographic changes taking place and the inherent effect that technology has and shall continue to have on these changes at an ever increasing rate. Care must be taken not to view the superficial trends being reported as those on which to focus. Instead it is necessary to examine the more concrete undercurrents of change.

After providing a historical perspective and some answers to the above questions, this chapter will address the relevant changes taking place that may affect that future direction of business education. It is hoped that this knowledge will assist educators and educational institutions in selecting the road of major reconstruction in business education to allow it, its students, and the nation to flourish.

THE CHANGING SOCIOECONOMIC CONTEXT: A HISTORICAL PERSPECTIVE

A transformation or restructuring of all industrial societies is taking place today which is as significant as both the agricultural and industrial revolutions were in the past. Approximately 10,000 years ago, homo sapiens learned that nature, to a certain degree, could be controlled. That was the beginning of the agricultural revolution. The strategic resource of the agricultural age was the land. The ownership of land was the foundation of success and medium of recognition. As the basis of power, land lent authority and status to those who owned it. In this hierarchical structure, however, individuals contributed in a win/lose situation since the basis of success, land, was diminished by use. Decisions were based on past experience. Where did I plant? What did I grow? Children were an economic asset to the family as they shared working the land with their parents. Economies were isolated in small local regions.

Approximately two hundred years ago, a second transformation of civilization began that would eventually transform every single institution and every set of expectations. This was the beginning of the industrial age around which a new society would eventually be built. In the industrial age, the

strategic resource changed to capital. Again, the resource diminished the power and recognition of its owner as it was used. The pyramid of organizational structures remained hierarchical, and the participants necessarily continued in a win/lose situation similar to that of the agricultural age. The time frame best suited to that age moved to the present. Everything had to happen today, this week, this month. The large multigenerational family of the agrarian society was no longer appropriate to the new system of economic production. Due to the need for a mobile labor force, the family adapted and became a nuclear family consisting of husband and wife and a couple of children. The husband went to work leaving the wife at home to assume the responsibilities of the house and children. The children of this economic age could be considered more a liability than an asset as they no longer worked or contributed to the economic well-being of the family. The economy generally expanded to become one that was regional and state based.

The United States, along with other developed parts of the world, is undergoing yet another transformation. It is shifting to a technology/information/service economy. How has this shift affected society? Human intelligence has now become the strategic resource needed in this new economy based on information. The power basis rests with the use of human capabilities, which unlike the mediums of recognition in the agricultural and industrial eras, are expanded by use. This transformation of society's base to information has lowered the typical pyramids. The new models of organizations are becoming increasingly democratized as individuals realize that information as a resource may grow in a win/win arena. The more one gives or shares, the more one gets back. The time frame has switched to the future. It is now necessary to learn more from the future than from the past or the present. No longer is it necessary for the entire American work force to go to work. Through the development of information and communications technologies, office work can now go to the worker via portable microcomputers and telephones. It may be that children, who are generally more computer literate than their parents, may once again become economic assets by assisting their parents in their work. Senior citizens may also be able to contribute more under these new circumstances.

This economy has grown to become one with a global base, the importance of which cannot be overstated. The shift to an information/technological society has contributed greatly to this development. With the capabilities of instant sharing of information through communication satellites and other technological advances, unimpeded global flow of information is possible; and multinational corporations begin to grow and take on economic and humanitarian significance. The economic linkages that are being formed are more important than the political differences which exist and, therefore, represent inherent possibilities for world peace. In its purist sense, a global economy implies a global family. In an information/technological society, the potential exists for parallel societies where infinite resources may be commonly held and processed to contribute to the growth of human existence worldwide.

The present educational system developed as this nation emerged from

an agricultural society, where the preponderance of education was on-job training, into an industrial society in which children went to school to learn the skills needed by that society. American society is now evolving into one that is as radically different from the one we have known as industrial civilization was from that agrarian world that preceded it. A new civilization is being formed that has its own systems and subsystems which are not an extension or straight line projection of industrialism but are based on new principles—and even on principles that contradict those on which industrial societies ran. Society is simultaneously developing a revolutionary new system, new levels of technology, new industries, new information and communication systems, new family structures, new corporate forms, new values and attitudes towards time and space, new life-styles, and new work habits. All of these add up to a new way of life, based on new principles.

Since the past is not necessarily a prelude to the future, danger exists in viewing trend lines of labor statistics in isolation. There is a need to balance information gained from studying trends, which are based on the past, with information reflective of the restructuring of society.

The impact of technology on society in general, and business and industry in particular, is important in understanding the workplace. It is the single most important factor in answering the key questions previously raised regarding what jobs will exist and the skills that will be needed to perform them.

THE CHANGING WORK FORCE

The United States is entering the age of technology/information/services. To illustrate this change, in 1960, 73 percent of jobs were in the trade and manufacturing sector. By 1983, the percentage of jobs in that sector of the economy had shrunk to 23, while information and service occupations accounted for 73 percent of jobs.

Technology itself is bringing about rapid changes, and its impact is being felt in all sectors of the economy. Within the manufacturing sector, the "smokestack" industries such as textiles, steel making, and automobile producing are being replaced by high-tech industries involved in biomedical engineering and microelectronics, for example. Those heavy industries which continue to thrive have done so through increasing use of automated production.

The accelerating rate of industrial change resulting from automation, robotics, and widespread computer use is dramatically altering the needs of business and industry and the composition of the United States work force. Workers whose skills have become obsolete are being displaced, losing their jobs permanently to new equipment. The federal government estimates that by 1990, between 17 and 19 million new jobs will be created; 13 million of these will be in "white collar" professions. This shift in employment opportunities points up the growing need to prepare entry-level employees with quite different skills than in the past and to initiate widespread retraining programs for displaced workers.

Although prognosticators continue to debate how the total occupational picture will look in the 1990's, there is general agreement regarding the growth of the service sector, also known as "service-producing industries." Workers in service occupations are less likely to be replaced by automation because of the personal interaction, high-touch aspect of their employment. This sector includes jobs in health, education, real estate, insurance, finance, entertainment, auto repair, and government, among others. Some of these jobs require considerable knowledge, education, and training; other do not. The U.S. Bureau of Labor Statistics reports that of the 10 occupations expected to produce the largest number of new jobs in the current decade, six are among the lowest paid/lowest skilled occupations: nurses' aides/orderlies, janitors, sales clerks, cashiers, fast food workers, and waiters/waitresses. Other fast-growing service occupations—physical therapists, speech and hearing clinicians, for example—require substantial postsecondary education.

Assuming human resources to be the most important resource in the emerging society, information would then be deemed the second. The office of the future must, therefore, be designed to accommodate this increasingly important resource. Business education is the key in preparing students for the roles they will be assuming and holds the greatest opportunity to enhance the emerging society since the focal, underlying aspect of its discipline is the development of human capabilities to use information.

The Bureau of Labor Statistics projects that more new positions for information processors (traditionally identified as secretaries, typists) and office clerks will be created in the 1990's than for any other occupation. The other leaders in the fastest growing jobs category identified by the Bureau are also information occupations: paralegal personnel, computer operators, and systems analysts. Economists, accountants, and employment interviewers will also be in high demand for the remainder of the decade.

Equally as important as knowlege of what occupational trends exist is the fact that nearly are jobs will require workers to know how to use information systems. Computer-assisted design (CAD) and computer-assisted manufacturing (CAM) are two examples of how even the most traditional jobs in the manufacturing and production sectors will require workers to enter, manipulate, store, and retrieve data. Technology is the major factor affecting the changes that are occurring and shall continue to occur in the workplace. Thus, the shift to the technology/information/service society is demanding new skills of workers in all sectors of the economy.

THE CHANGING WORKPLACE

As technology is affecting the restructuring of the work force and the nature of work itself, it too is changing the workplace. Offices of the not too distant future will differ significantly from those that have traditionally existed. In fact, even today, office automation has changed where work is and can be done. As stated earlier, work no longer needs to be done *in* the office. Information and communication technologies have enabled work to go to the worker instead of the worker to go to work. It can now be done at home,

out of doors, in the air, and even in other countries. It is a distinct possibility that the increased availability of low-cost computers and communication systems will allow millions of workers to use their homes as their primary worksites.

Carrying this one step further, the decreased cost of automation has already enabled some U.S. companies to move their operations to offshore sites in foreign countries which offer the advantage of lower labor costs. The most common form of work being performed in offshore offices is data entry. China and countries in the Caribbean region are examples of places where facilities now exist that perform the function of data entry for American firms. Offshore labor costs are often six times less than they are in the United States. Recognition of the fact that 15 million of the jobs now held by American workers could be moved to other countries, and that many of these would consist of jobs traditionally held by entry-level business education graduates, indicates the need to examine the skills needed for future graduates.

On the home front a new phenomenon known as the electronic office, characterized by integration of text and data processing, is evolving. The traditional office and its related procedures and systems of the industrial society will remain, through the rest of the 1980's, in a state of transition that will culminate in the 1990's in offices with totally integrated information processing systems.

Educators must recognize that present and future graduates will no longer be assured of entering a "traditional" office when finding initial employment, due to the variations in size and sophistication of information systems. Students, therefore, will need to be exposed to the various levels of sophistication.

NECESSARY SKILLS FOR THE FUTURE

The confusion that exists in attempting to anticipate the future can be seen even in this chapter. Cited earlier were Bureau of Labor Statistics projections indicating that more new positions for information processors (secretaries, typists) and office clerks will be created than for any other occupation. Further on, the reader is confronted with the fact that millions of data-entry jobs can even now be moved offshore due to automation. As with much of the information provided by the media and various public and private reports, the individual must interpret the facts as best he/she can.

In this illustration, the best interpretation would seem to be that the positions projected by the Bureau will probably exist; however, due to advancements in technology, many of the skills that will be required for these occupations will change. Of course, the basic skills of reading, writing, computing, communicating, and reasoning will continue to be required skills for all office occupations.

In a rapidly changing, highly technical work world, will specific job skills still be needed? The traditional role of vocational education has been the training of high school students to do specific jobs. This philosophy runs counter to the recommendations of many national reports which call for a

coordinated curriculum that emphasizes the development of broad, transferable skills in order to prepare students for a variety of occupations. As in all vocational programs, business must prepare students for the rapidly changing job market.

U.S. Secretary of Education William J. Bennett stated in December 1985 that, in order to meet the changing needs of our society and our students, education must "stake out a sensible middleground" between academics and trade skills. He urged the education community to adopt a "solid academic curriculum" that places greater emphasis on "broad career education" than on "job-specific training." Mr. Bennett further stated that emphasis should be placed on the teaching of "general skills, general knowledge, and worthy values and habits."

This new philosophy is reinforced in one of the latest national reports on educational reform, *Investing in Our Children: Business and the Public Schools*, a policy statement by the Committee for Economic Development. In this report, business education's primary purpose—enabling students to find meaningful work—is clearly stated. However, the means of realizing this objective suggests educational preparatory programs which enable students to assume a wide variety of career roles and responsibilities. The Committee recommends that students have a common curriculum which emphasizes critical and analytical thinking skills, self-discipline, lifelong learning, responsibility, communication skills, flexibility, and the work ethic. Specific job competencies, the traditional focus in occupational programs, seem to be less significant in the emerging society.

Thus, the new role of business education calls for the development of a balanced program which enables students to acquire broad, transferable skills for employment and personal use, as well as job-specific skills. In its new role, business education should provide students not only with minimal, entry-level job skills but also with the basic skills that will enable them to adapt quickly to the changing requirements of new technologies and to benefit from lifelong education and retraining opportunities.

Among the most important of the broad, transferable skills needed by business education students are: (1) knowledge of the systems of computers and technololgy, (2) problem-solving and decision-making skills, (3) resource management skills, (4) understanding of the economics of work, (5) applied math, (6) career and personal planning skills, (7) interpersonal skills, and (8) data manipulation skills. Personal flexibility, founded on and developed through acquisition of these basic skills, will be a passport to job and career growth as the changing requirements of the workplace force employees to update and retool job skills continually through training, retraining, and education. These broad, transferable skills are necessary not only in the workplace but in managing one's personal life.

It will be necessary for all administrative support positions to have a basic understanding of the relationship among the various subsystems within the totally integrated information processing system in order to understand the whole system. It will also be necessary for office workers to recognize that automation is changing the roles and responsibilities of all office workers

and that effective administrative support is a product of teamwork. This is a basic philosophy all students should learn and understand. Effective teamwork requires that each member of the team understand the objectives, the system, and the specific role each is expected to perform.

SOCIAL, ECONOMIC, AND DEMOGRAPHIC CHANGES: THE LARGER CONTEXT

Having identified what business occupations will exist in the future, where they will be, and what skills will be necessary for business education graduates, the larger context of society in which education exists will now be explored. The social, economic, and demographic changes must be taken into account in determining in what direction business education must procede.

Social changes. A major alteration seen in today's society is its basic component, the family. Demographics now indicate a marked increase in homes that are headed by a single parent. One child in five lives in a single-parent home headed by his/her mother. Another 2 percent live in single-parent homes headed by fathers.[1] According to the Census Bureau, 24 percent of children under the age of six and 20 percent aged six to seventeen lived in poverty in 1984. A full 46 percent of households headed by women fell below the poverty threshold in 1984, which was $10,609 for a family of four.[2]

Although the figures may be shocking, the reasons for them are quite simple. The jobs for which women have been trained in the past have often been ones that are poorly paid. Add to this the need in many situtations for child care. When a good day-care program can be found, it is likely to cost over $3,000 per year for only one child.[3]

Statistics on black families are even worse. Fifty-one percent of all black families are headed by women. For the most part, these families are poor. Unless appropriate social programs are put into place, the number of children living in poverty is likely to grow since an increased number of them are black or Hispanic—two segments of our society which suffer most from poverty.

In the industrial society the roles of various ethnic groups, as well as the roles of females and males, were predetermined for them. Most individuals and institutions are now sensitive to these equity issues as well as ones related to the needs of the handicapped and disadvantaged. However, further attention must be given to the inequities which still exist in our society in general. Of course, many of the concerns related to the changes taking place in society regarding families, presented earlier, are likewise equity issues.

Sex equity problems also exist for both boys and girls in our schools. For many years it has been recognized that boys have had more difficulties in the classroom, as well as in learning, than girls. These problems, in part,

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[1] Edmonson, Brad. "How Big Is the Baby Market?" *American Demographics* 7:25, 50, December 1985.

[2] *Ibid.*

[3] *Ibid.*

are viewed by many as being caused by the boys' view of elementary school as a feminized environment. Hopefully, having more male teachers in the early grades will diminish some of these problems. However, in light of the statistics on the number of single-parent homes headed by women with no male role model at home, the difficulties boys have in general may be on the rise.

Since the enactment of Title IX in 1982, many gains have been made in prohibiting sex discrimination. Attitudes on equity are sometimes difficult to change, however, and the tracking of individual students in many cases remains sexist and stereotypic. This seems to be more of a problem in secondary schools than in institutions of higher learning. The number of female college students, in fact, is higher than the number of males. There is a marked increase in the percentage of degrees earned by women and in the number of women entering the professions.

The greatest number of people being prepared for jobs with lower wages continue to be female. This includes nursing and secretarial science. By 1990, 73 percent of the adult female population will be employed. The fact that their wages reflect only 59 percent of what men earn for the same job points out an equity issue which needs to be addressed by business as well as education.

Of equal importance is the issue of equity between races. National statistics indicate a great inequality of income among races. In 1982, the median family income for whites was $16,750; for Hispanics, $11,421; and for blacks, $9,653. Education must recognize its responsibility to provide all citizens with the skills and competencies that will enable them to select a career based upon their abilities and interests, rather than having society determine their future based upon their heritage.

The need to provide educational and work opportunities to the handicapped is yet another social issue that has come to the forefront. Although great strides have been made in the last decade in providing educational opportunities to handicapped students under the age of 21, the need to form a linkage to the world of work for these students as they "age out" of the education system is becoming a larger issue due to greater expectations by their families and society.

In general, all citizens have grown to have greater and greater expectations. Today our citizens ask government, business/industry, and education to provide more and more services. This can only be accomplished, however, by developing a competitive edge over other nations. Human resources, not national resources alone, will determine that competitive advantage. Education naturally is being asked to respond by providing students with all the skills and knowledge needed to live and work productively and positively in a rapidly changing high-tech world. In vocational education in general, and business education in particular, this means producing graduates who can obtain and retain employment in this changing world.

Economic changes. During the industrial era when economics were based on regional and national needs, the United States led the world economically. Since the late 1960's, however, this economy has faced a rise in unemploy-

ment, growing numbers of business failures, and decreased productivity. This economic decline in the United States has occurred as standardized mass production has become cheaper abroad.

Although social issues such as equity, civil rights, education, welfare, pollution, etc., are seen by many as the cause for many problems within the American economy, the real problem is the inability of both business and government to learn how to deal with the realities of international competition in a global economy. The countries in the world that have internalized this economic progression and learned to deal in it have a competitive edge. The United States must assume this direction if it is to retain its leadership role.

America's future lies not in high-volume, standardized industries, but in a skilled, adaptable, and innovative work force, as well as organizations based on adaptability. The very institutions, business enterprises, labor unions, and government that enhanced success in the past now threaten the nation's economic future.

A few American companies have recognized the need to use their capital and human resources for flexible-system production which depends on high-level skills rather than standardized production. Precision, custom, and technology-driven products are ones that fall into this category. Despite the efforts of companies like IBM, Hewlett-Packard, and General Motors, the shift to flexible-system production could not be slower.

For the first time in our nation's history, it appears that children will not achieve the degree of financial success their parents have. Only by taking strong leadership in developing new high-tech industries and focusing on high-value jobs within the more traditional industries can an industrialized nation such as ours increase the standards of living of its citizens. America must recognize and accept the challenge facing it.

Demographic changes. America is undergoing a demographic revolution that is affecting the way people act and think. A key factor in this revolution is the 80 million member baby-boom generation which has created a demographic bulge that influences everything from educational institutions to social security payments. This segment of the population does not conform to traditional patterns of American life. Members of this generation are marrying later (and divorcing more frequently), postponing children, and establishing smaller households, thus setting off a myriad of repercussions.

The population of the United States is getting older. Already issues are being raised that are generational in nature. Many of these focus on the social security system and the effect it has on the present population and will have on future generations.

In 1940, the ratio of employed workers to retired persons was 10 to 1. By the middle of the next century, the ratio will be less than 2 to 1 compared to today's ratio of 3.4 to 1. Factors that have much bearing on these figures are, again, the aging of the baby-boom generation, the increased life expectancy of the population, and lower birthrates.

Fifteen years ago, the elderly were worse off financially than other segments of the population. Due to increases in social security benefits to the elderly

and fewer dollars in federal aid to children, youngsters are now the most impoverished, with nearly 20 percent living in poverty. Young adults have been hardest hit by high inflation, negative real wage growth, and escalating housing costs. These economic and demographic issues related to social security are just coming to the forefront, but are ones that will need to be addressed in order to thwart a diminished standard of living for today's younger and tomorrow's future generations.

Migration and immigration are two other major factors affecting the demographic revolution. The distribution of the U.S. population is shifting as people continue to migrate from the Northeast and Midwest to the Southeast and Southwest in search of jobs, sun, water rights, and lower heating bills. Immigration, too, plays a role. For the period 1977 through 1979, the number of immigrants entering the United States in each year surpassed the number that had been admitted in any similar time period since 1924. Recognizing the sometimes detrimental effect illegal immigration has on American workers, the government is attempting to find the best means of dealing with this national problem. Some school districts across the country have experienced dramatic rises or declines in enrollments, with shifts in demographics and ever present financial problems caused by migration and immigration.

The composition of the work force is changing, too, as more women become employed outside the home. In 1960, only 33.3 percent of all women were so employed. By 1980, the total had climbed to 51 percent, and it is projected that 73 percent of the adult female population will be employed outside the home by 1990. Currently, two-thirds of all newcomers to the workplace are women; and the participation of adult males is dropping, due in part to the obsolescence of their job skills.

It should be noted that demographic projections can be made with considerably more certainty than other forecasts of the future. While technological predictions are thought to be accurate 5 to 10 years into the future and economic forecasts are reliable for about 90 days, demographic projections are generally reliable for 10 to 15 years. Approximately five out of every six people in the work force in 1995 are already working or looking for jobs.

SOCIAL, ECONOMIC, AND DEMOGRAPHIC CHANGES: RESULTANT EFFECTS ON EDUCATION

The social, economic, and demographic changes coupled with the underlying influence and effect of technology are creating an emergent educational structure composed of a "new" student with different educational needs. For this emergent educational structure to continue to fulfill its purpose to enable learners to lead full, meaningful, contributing, and productive lives, attention must turn to a realization that students are changing, educational systems are changing, and educators must be able to meet these changes. Without an understanding of the effects which technology and the information-based society have on students, education, and educators,

educational reform is meaningless against the backdrop of societal shifts and technological advancements.

Changes in students. Today's students possess a "gain without pain" philosophy as opposed to the traditional "no pain, no gain" belief of old. This has been nurtured by high-tech's encouragement of more for less—or more output for less input. In the industrial age, working harder was valued and rewarded; in the age of technology, this has lessened. The absence of work and the ability to get more done for less frees one to spend energy on higher concerns and conserves resources. In school, therefore, students expect more for less effort.

Less integration by family, mobile life-styles, working and single parents, multiple marriages, and altered family structures find students exploring and trying on life experiences with little supervision. Schools, thus, oftentimes must take on the role of parenting and implant self-discipline, respect for authority, and a sense of interdependence in organizational and community structures.

Affluence, availability of goods and services, and societal models of higher standards of living lead students to drive for materialism and more money. Values have shifted as young people are reinforced with the belief that "getting ahead" and "getting more" are the ideals without regard to means or cost of obtainment.

In a fast-fix, fast-food, microwave, fast-jet world, students respond instantaneously and quickly. They expect quick answers and possible solutions to everything. This sense of urgency in response to life disallows development of essential mental processes of problem solving and decision making. Thus, educational programs in general must attempt to assist students in relearning basic approaches to coping and adjusting to life, and business education in particular must address students' expectations for programs which provide immediate purpose, relevance, and growth.

The black and white, right and wrong, good and bad, either/or extremes of the agricultural and industrial societies have been replaced by a multiple-options information/technological age. Today's students know only multiple choices. They are accustomed to having a variety of options regarding clothing, food, what they read, watch, and do. Computers have enabled students to create a guilt-free environment. The cursor enables one to merely choose another option, to create anew, to reformat, to change—not to correct. Students, thus, expect schools to provide options and to allow for individual differences and a variety of ways and means for them to learn and grow.

Regardless of the social, economic, and demographic changes and technological advances, students still are uniquely human; they feel. Thus, many students, submerged in a fragmented, constantly changing, confused, and yet strangely beautiful and promising world, struggle to find meaning in the seemingly meaningless. Balancing hope and despair, adolescents grope with their physical, emotional, psychological, intellectual, and spiritual realities. This quest of "Who am I? What am I doing? Where am I going?" is perhaps the most paramount and permeative part of the growth, discovery, change, and experiences of young people during their school years. It is not

surprising then that educational primary goals must include self-esteem and self-concept as well as logical thinking, computational and communicative skills, decision-making abilities, and computer capabilities.

Changes in educational systems and programs. In the transition from an industrial to an information society with its expanding and increasing availability of knowledge and changing jobs and workplaces, lifelong education becomes a concern for all components of the educational system. This emphasis on lifelong learning reinforces the characteristic of an information age that skills acquisition becomes unlimited. Learning becomes a medium for human actualization of new capabilities constantly changing and developing in a vast worldwide information system enhanced by technology. Curriculums need to be expanded to meet a diversity of needs and desires; innovative school hours and year, day-night, drop-in/drop-out, youth and elderly, part-time, work-study, and training and retraining programs need to be instituted. Facilities beyond the traditional school building need to be utilized. Learning in the future may be more relevant at home, work, or within special communities or private industries. Delivery systems must move beyond the traditional classroom teachers to satellite communications, computer-assisted instruction, television, apprenticeships, and work-study programs. Program expansion must continue to focus on the traditional basics while emphasizing new basics of higher level skills. Creativity, critical thinking, synthesis, application, organization and reference skills, and evaluation and analysis skills are as significant as the "three R's" in the information/technological age.

Changes in business education. The newly defined basics or core courses in occupational education and general education (the balanced curriculum) have always been a part of business education's specialized courses. Separating these basics into required areas of study and refocusing priorities on core skills will enable business education to move away from the "depth" approach—subject organization—to the "breadth" approach—broad fields curriculum. Along with this development of the broad-based, transferable skills which were identified earlier in this chapter, business education program offerings must blend business and marketing education. To prepare students for work in the 1990's, program designs separating accounting from office, secretarial from clerical, and computer-related from noncomputer-related occupations must be eliminated. Students will no longer graduate from a secondary program in business education and obtain and remain in a specific entry—level position. Tomorrow's work world will contain a transitional work environment with changing equipment, work tasks, and responsibilities. Retraining will be continuous and jobs will be transitory. Thus, business education program designs must allow students to blend business and marketing options and to join courses in disciplines which typically have not been coupled. Opportunities should be provided to mix courses from all areas—accounting, office, information/data processing, marketing—to meet program requirements. Students need a multifaceted program to meet the demands of an information/technological age.

Changes for business educators. Business educators, as all educators, must continue to provide a unique sensitivity and outward reach to students to enable them to believe They can, they're okay, they're wonderful. Along with this unique ability, teachers will need to have access to and be willing to participate in mechanisms and programs to enhance and update their expertise. Technical skills will continue to change. Educators will need to overcome personal fears of inadequacy in areas where they were once the masters; they will need to be willing to adjust to programmatic and curricular changes; and they will need to recognize with their students that learning in an information/technological age is lifelong.

Present models of teaching do not fit the increasing democratization and nonhierarchical characteristics of an information society. The approach of the teacher standing in front of the class imparting knowledge is obsolete and inhibits innovation that is so typical of today's world. The role of teachers must become that of a learning consultant, facilitator, and advisor. As such, the teacher enables students to learn together in parallel interdependence using business's effective model of learning teams. Skills of relationship, collaboration, participatory problem solving, shared resonsibility, and cohesion become learning outcomes.

In a computer rich world, "don't" as a cognitive style doesn't fit. The hard, engineering mode of teaching has become antiquated by the computer. Thus, students will need a soft mode, one that is negotiating and interactive. Students need to have opportunities to choose their own styles of mastery in a computer culture.

With a multiple-options approach to living in general, students will need a more personalized education to meet individual abilities, values, and goals. Teachers will need to allow people of all ages and backgrounds to progress at their own pace and in a variety of instructional modes. With the movement away from specific facts and skills in a rapidly changing, informational access society, learning activities will need to allow for integration and application of concepts and skills so that students will be able to utilize information, solve problems, and adapt to and grow with change.

The business educator's challenge parallels that of tomorrow's students. As social, economic, and demographic changes occur, as technology continues to impact on work and personal lives, teachers as well as students must develop an ability to adapt, to modify, to learn, to relearn, and to adjust to changing circumstances in order to bring to fruition the actualization of human potential and best utilize the strategic resource of human intelligence in this new age.

SUMMARY

The United States is evolving into a technological society. More than ever before, it is operating in a global economy, where it is encountering increasing international competition. If the United States is to retain its leadership role in the global economy, there is a tremendous need for business educators, who prepare future workers, to understand the projections and implications

of the social, economic, and demographic changes taking place in the context of the technological society. Business educators can learn from the happenings in our society and then respond to that knowledge with imagination and maximum effectiveness. By identifying the facts as they relate to our students, to what jobs will exist, to what skills and competencies our students will need, to what educational systems and programs will best meet students' needs, and to our roles as classroom teachers, business education will step forward away from the crossroads of confusing old and new and onto an untrodden pathway clearly marked by the guidepost, "the future of our learners." Decisions along the untried way will hopefully allow it, its students, its teachers, and the nation to progress and build a better life.

CHAPTER 2

Preparing Students for Career Changes

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The twofold purpose of education for and about business has been adopted by many business educators. There has always been a challenge to serve both the needs of students preparing themselves for placement in the business world as producers and those seeking the skills, knowledge, and attitudes necessary to become effective citizens and consumers. As a component in the occupational education family, business education plays a major role in providing the qualified individuals required by our business-oriented society. Although supplying manpower has been a primary purpose, the fact remains that the supply and demand match has never been a reality. Changes occur daily in the job market as evidenced partially by the numerous job opportunities advertised in newspapers across the nation. At the same time there are many citizens who remain unemployed and do not possess the necessary requirements to make application and successfully accept those available job opportunities.

Today, more than ever before, business educators recognize the need to do the best job that is possible in preparing students for a workplace which is dynamic and ever changing. The concern goes beyond providing for just the required entry-level skills—it involves the type of preparation which is necessary to enhance advancement on a job and the ability to adapt or change. How do business educators prepare students to accept change and to adapt to change once they have entered the world of work and are faced with a need to change?

This chapter presents some suggestions to business educators with the hope that future students will be even more successful in making those inevitable career decisions and changes. Before business educators can appropriately plan to teach students how to cope with change, a background is necessary in understanding the process of change. In addition to an orientation to the change process, other topics include the need to stress problem-solving skills, self-discipline, and the ability to acquire and apply new knowledge. Appropriate career education activities are necessary for students in learning how to plan and control their futures. The skills required in learning how to learn are equally important in teaching students how to think logically and to participate in rational decision making.

UNDERSTANDING THE PROCESS OF CHANGE

Business educators need to become aware of the nature of change and the process through which it occurs. The American society is experiencing a

"knowledge explosion" which is drastically changing our society and having a tremendous impact on what is being taught in classrooms today. In some cases, educators have responded to this increase in both knowledge and technology by planning for change; however, in other cases, action taken has been simply an effort to "keep the head above water" or to meet a crisis situation.

As an example, the recent influx of microcomputers in school classrooms at all levels has been accomplished mainly through planned efforts; the accompanying training and inservice necessary for effective operation of the computer labs has not received an appropriate amount of planning and attention. Activities such as these represent important decisions in identifying a need for change and in planning for effective change.

In learning about the process of change and understanding the role of the teacher in the process, a better job can be done in the preparation of students. It should also follow that student learners will become aware of the process and, therefore, prepare themselves to cope with changes in the work setting as future employees.

Change in business education is inevitable in order to reflect the needs of our society. Business educators, along with teachers in other disciplines, are faced with the responsibility of effecting change and must be prepared to deal with this complex process. The educational leader should know about (1) the change process and his or her role as a change agent, (2) factors that affect the change process, (3) criteria to be used in deciding whether or not to change, and (4) the key steps required to implement educational change. "It is through this process that changes will be accepted and have a lasting effect on the school and the community."[1]

WHAT DOES CHANGE INVOLVE?

Business educators can readily identify changes in which they have been involved during their professional careers. It is very likely that some of these changes have not brought increased benefits, and this has created an attitude of skepticism when a new idea, product, or technique comes along for consideration. Unfortunately, the decision to make a change oftentimes is simply a "gut-level feeling" on the part of an administrator that "something will be good," or it is a hastily made decision which has not been thoroughly evaluated.

Change has been simply defined as a change in status quo, but the definition offered by Havelock focuses on the anticipated benefits to be gained. He defined change as "any significant alteration to the status quo which is intended to benefit the people involved."[2] Changes in education often are termed innovations, which have been defined by Russell as any idea, practice,

[1]Finch, Curtis, R., and McGough, Robert. *Administering and Supervising Occupational Education*. Englewood Cliffs, N.J.: Prentice-Hall, 1982. p. 177.

[2]Havelock, Ronald G. *The Change Agent's Guide to Innovation in Education*. Englewood Cliffs, N.J.: Educational Technology Publications, 1973.

or program with potential value to education which has not been implemented on a general basis.[3]

Examples of past educational change and innovations include such things as the open classroom concept, modular scheduling, educational television, competency-based education modules, team teaching, mainstreaming, consumer education, cooperative education, career education, model office, computer scheduling, and computer literacy.

According to the definitions given above, it is possible that an innovation in one instance may not be considered an innovation or educational change in another. The implementation of a cooperative education plan or a model office in a school district which previously operated neither would be considered an innovative practice or change. To do the same in a school district which has other cooperative plans and model offices in operation would not be considered innovative.

ACCEPTANCE OF CHANGE

The point can be made that some type of change is inevitable, and it will occur regardless of whether or not all persons involved are ready and/or even willing to accept the change. All changes under consideration should be thoroughly examined to determine whether or not the change is a beneficial one. Stitt pointed out that office technology demands curriculum reevaluation and stated that "the majority of business education programs today remain relatively unchanged from what they were 10, 15, or even 20 years ago." In addressing three specific curriculum areas, she cited the need for responsible teachers "to look beyond our noses and make some changes in our approach —something that is rarely an easy task for anyone.' "[4]

Those who are involved with educational change need to recognize that acceptance of change is a product of a sequence of events and influences operating through time rather than being some kind of instant metamorphosis. The time factor implies the need for sustained effort over a period of time before results can be accomplished. The sequence of influence implies the need for appropriate ordering of educational efforts to achieve results.

The work of Rogers and most other researchers of the change process identified five stages: awareness, interest, evaluation, trial, and adoption.[5] These stages are important in that they have given depth and meaning to the research that has been done and have permitted generalizations that otherwise might not have been possible. Information gathered, analyzed, and considered in each step provides insight into factors involved in decisions to change or not to change.

Each of the five stages is analyzed below with a definition and some practical applications:

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[3]Russell, Earl B. *Measurement of the Change Orientation of Vocational Teachers*. Columbus, Ohio: National Center for Research in Vocational Education, Ohio State University, 1971. p. 20.

[4]Stitt, Wanda L. "Office Technology Demands Curriculum Reevaluation." *Business Education Forum* 37:11-12; December 1982.

[5]Rogers, Everett M. *Diffusion of Innovations*. Glencoe, Ill.: The Free Press, 1962.

1. Awareness: The teacher, student, administrator, parent (or whoever is involved) learns of the existence of the innovation or change.
2. Interest: More information about the innovation is sought by the individual in order to consider the merits of the new idea or change.
3. Evaluation: A mental application of the innovation is made, and its merits are weighed as they relate to the evaluator's own particular situation.
4. Trial: An application of the innovation or change is begun on a small scale.
5. Adoption: Based on the trial application, a decision is made concerning continued use of the innovation or change. This decision may be an acceptance or rejection of the innovation.

As indicated in the process stages above, change is based on evaluating a new idea, practice, or program which may offer "a better way of doing something." Business educators are constantly faced with the challenge to review curriculum content and classroom methodologies to keep up to date. Being aware of what is new and capable of providing benefits is a necessary beginning in planning for change. This awareness can come from joining and becoming active participants in professional organizations; through close ties with business and industry representatives via such avenues as advisory committees, cooperative program plans, consulting; and reading professional journals and research reports. Stitt suggested the business educator "read and research constantly in order to remain current with technological developments and office procedures" and then communicate this information effectively through creative and innovative teaching methods.[6]

Once the business educator is aware that other options exist or that there are alternatives to current practices, then additional information can be gathered to help determine whether or not "what is new" has merit. During a thorough review of the available information and data, the teacher makes a mental application and attempts to weigh all merits in terms of how they "fit" the particular situation under consideration. An example which could be used at this point is that of evaluating software for use in business subjects or programs equipped with microcomputers. All software available on the market is not suitable for use in preparing students with job skills, knowledge, and attitudes. A careful evaluation must be made to determine mentally which software, for instance, seems acceptable for students in learning the required content.

The next step would be the "trying out" or trial phase. Following through with the above example, whatever software choice was made is now implemented on a small scale. Any problems with the program content or ease of use will usually surface when students use the software. By the same token, the value of the software as an effective teaching tool will become known. This trial phase will then provide the appropriate information upon which a decision can be made to adopt or not to adopt this particular piece of software.

Hull and others pointed out several elements in the change process that

[6]Stitt, *op. cit.*, p. 11.

assist with the spread and acceptance of innovations. These are the change advocate, the targeted consumer, and the innovation itself.[7]

There are times when an innovation has the support of a particular person or group in promoting its acceptance. The change advocate can be a teacher, administrator, student, professional organization, employer, parent, or parent organization. An example would be an elementary principal indicating a desire for his or her school to participate in the Developmental Economic Education Program (DEEP) sponsored by the Joint Council on Economic Education. It is likely that teachers in the school would be influenced by the desires of the principal, who is an advocate of this new program. Another example would be the local parent teacher organization expressing interest in equipping a microcomputer laboratory in one of the local schools. This advocacy would certainly create support from other individuals both inside and outside the school setting. The outcome of this expressed interest could well result in curriculum changes in that particular school. Change could also come in the form of a local board of education mandate that all students will be proficient in computer literacy skills at the time of graduation.

The last element is the innovation itself. Naturally the merits of an innovation will have great bearing on its acceptance. Since an innovation can take on any form, it can also be identified by a variety of characteristics. The innovation can be classified according to a particular type, and the costs and benefits of the innovation can be determined. Hull and Wells classified innovations as individual-behavioral, organizational-legislative, and scientific-technological.[8] They developed an *Innovations Evaluation Guide* which allows the evaluator to take the characteristics of a particular innovation and determine the costs and benefits. This provides information which can then be used in making a more rational decision than would be possible by not evaluating the characteristics of the innovation in terms of costs and benefits.

The foregoing discussion and examples tend to simplify the process of change; however, the topic is a complex one which is important to understand and one which demands greater coverage than can be allotted in this chapter. The primary purpose for this section was to make the business educator aware of the change process and the importance of understanding change and how it occurs. This same information base can be used by the business educator in teaching students about change and how to adapt.

THE ROLE OF CAREER EDUCATION IN PREPARATION FOR CHANGE

The concepts of career education are certainly not new to business education; however, some thought needs to be given to the importance of these concepts as they relate to career decision making and career changes.

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[7]Hull, William L.; Kester, Ralph J.; and Martin, William B. *A Conceptual Framework for the Diffusion of Innovations*. Columbus, Ohio: National Center for Research in Vocational Education, Ohio State University, 1983.

[8]Hull, William L., and Wells, Randall L. *The Classification and Evaluation of Innovations for Vocational and Technical Education*. Columbus, Ohio: National Center for Research in Vocational Education, Ohio State University, 1972.

Although business educators have been implementing career education concepts all along, the real impetus for growth began in 1971 when the U.S. Office of Education started research efforts to develop four models of career education.

In the wake of new activity, various definitions surfaced for career education. One list of characteristics was endorsed by the state directors of vocational education at their 1971 conference to clarify the content and process. Career education:

1. Enhances rather than supplants all education programs; serves as a vehicle to improve the learning process
2. Is an integral part of the present structure of all schools
3. Involves all students and all educators
4. Involves extensive orientation and exploration of occupational opportunities
5. Is dependent in its implementation on the commitment to and obligation to fulfill the philosophy of career education from all levels of the community, government, and institutions of higher education
6. Emphasizes individualized instruction and student involvement in career attainment
7. Humanizes the educational process as it encompasses the self-concept and its relation to the world
8. Is a continuum that begins with preschool and extends throughout public school and employment
9. Contributes to student incentives, aspirations, and expectations
10. Includes specific preparation for occupations through vocational education or other appropriate educational experiences
11. Develops realistic occupational choices
12. Promotes positive attitudes toward all useful work including psychologically rewarding endeavors
13. Permits each student to realistically assess personal attributes as a part of setting life goals
14. Provides a means of articulation from grade to grade and from level to level
15. Is not necessarily synonymous with vocational education, but vocational education is a major part of career education.[9]

Even though career education has appeared at all levels in education and has been the title attached to a variety of activities, Calhoun and Finch found that there was:

> . . . general agreement in the objectives of career education that would (a) allow all students to relate their education to the world of work; (b) provide an opportunity to engage in occupational exploration, including work experience, specialized instruction, and career decision making, leading toward a preferred life-style and career pattern; and (c) provide automatic exit and reentry to the educational system or the labor force as needed. The transitional phases in career

[9]Calhoun, Calfrey C., and Finch, Alton V. *Vocational and Career Education: Concepts and Operations*. Belmont, Calif.: Wadsworth Publishing Co., 1976. p. 5.

education programs that are most evident are career awareness, career exploration, career identification, career preparation, and career assessment.[10]

The role of the business educator usually falls into the realm of the preparatory phase of career education, but student success requires meaningful experiences in all phases. Although career education is the responsibility of all educators at all levels, student needs must be met at whatever level they emerge.

In reflecting on the importance of a career plan for students, Bright listed the following concepts to be understood by business educators when planning a unit in career education:

1. Education and work are interrelated.
2. Individuals differ in interests, abilities, attitudes, and values.
3. Environment and individual potential interact to influence career development.
4. Occupational supply and demand have an impact on career planning.
5. Our society and job specialization create interdependency and interrelationships of jobs.
6. Career development is a lifelong process, requiring a continuous and sequential series of choices.
7. Leisure time activities may influence career choice, and career choice may affect leisure time activities.
8. Knowledge of where and how additional training and learning experiences can be acquired is important in career development.[11]

A number of states have implemented exemplary plans for career education. As indicated previously, an important element is that of teaching students how to cope with change. In describing the Georgia Plan for Career Education, Stout addressed the four major areas of (1) self-awareness and understanding, (2) career awareness, (3) education, and (4) decision making.[12] High school diplomas for the 1986 graduating class are based on students' satisfactorily meeting four requirements pertaining "to the areas of attendance, Carnegie units, basic learner skills, and life coping skills."[13]

Mallinson cited the need to broaden the definition of career education to incorporate the transition of our postindustrial society to an information society. With more than 50 percent of the American labor force engaged in doing information work, career education takes on a new focus of retraining, new methods brought on by technological advancements, and training for careers that are nonexistent today.[14]

Upon completion of career awareness, orientation, and exploration experiences and activities, students should be ready for the preparatory phase of career education. At this point, the student should have experienced an

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[10] *Ibid.*, pp. 142-43.

[11] Bright, Don. "Career Education Teaches Importance of Career Plan." *Business Education Forum* 38:19, March 1984.

[12] Stout, Vicki J. "Coping with Change Through Career Education." *Business Education Forum* 38:20, January 1984.

[13] *Ibid.*

[14] Mallinson, Linda. "Career Education—A New Direction." *Business Education Forum* 38:26, November 1983.

awareness of self and how his or her particular interests and aptitudes relate to career aspirations. The student should now understand that learning is a lifelong process and that sound educational decisions are necessary in achieving career goals.

The phases of orientation and exploration have helped students identify and understand the complexities of the job market. Their information base concerning possible career choices has strengthened, and they have gained insight into several clusters of occupations which interest them as potential career paths.

As much background as possible has been provided so that students have learned about the economic benefits that will accompany the various occupational choices that each has under consideration. The student should also know what the skill, attitude, and knowledge requirements are for the various occupations. In addition to the entry-level requirements, the student should understand what will be necessary to advance in each of the career options. This approach to career choice will provide students with decision-making skills which will not only help them on the job but will also help assure that the job choice has been an appropriate one.

Even though the focus in business education will continue to be that of teaching for and about business, Stout stated that "some of the specifics of the 'for' and 'about' will change."[15] Along with providing periodic technical employment-related information, business educators must teach "durable" or "stable" skills, knowledge, and attitudes linked to coping with the nature of change.[16] Interpersonal skills, the ability to reason, and the ability to make informed decisions were cited as facilitators for survival amidst technological and societal changes. "Employees who can adapt to fluctuations in job expectations and pressures will outlive the crises which occur in daily work. Resilient employees will recover or bounce back when confronted with the unexpected."[17]

THE NEED FOR CHANGE IN BUSINESS EDUCATION

According to forecasts of the federal government's Bureau of Labor Statistics, high-technology industries will generate 1.7 million new jobs by 1995. Even with this amount of change in the work force, the high-technology industries will employ only 7.7 million people out of the total of close to 123 million. Most of the new jobs will be in services rather than manufacturing, with retailing becoming the largest area of employment with 21.3 million people. Although high-tech occupations make up a small part of America's occupational structure, the pervasive impact that technology will have on the workplace will present business educators with a challenge.

A National Conference on the Future of Business Education was held in Cincinnati during August 1985. Published proceedings of the conference speak

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[15] Stout, *op. cit.*, p. 21.

[16] *Ibid.*

[17] *Ibid.*

directly to the need for change in business education in order to continue to graduate students who meet current occupational requirements. Hoyt reported on the major expected occupational changes, the major issues and arguments regarding predicted occupational change, and the implications for business education. He stated that "the best bible for use in finding definitive answers to the nature of occupational change is the *Occupational Outlook Handbook* published by the U.S. Government (U.S. Department of Labor, 1984)." In quoting from the *Handbook*, he felt optimistic about the prospects of business education for future employment opportunities. In speaking to the question, "What kinds of persons are employers looking for in business education graduates?" the following *Handbook* statement was cited:

> Employees prefer high school graduates for clerical jobs. They look for people who understand what they read, know basic spelling and grammar, and can use arithmetic . . . continuing advances in office automation have increased the demand for clerical workers who are versatile enough to learn new technologies. . . .[18]

In considering the problem of the probable impact of automation and high technology on both business education and on jobs for business graduates, Hoyt felt that "instruction in such things as word processing, spreadsheets, and computer applications in business is certainly called for." He further stated that "while to be sure, some kinds of specific training programs—e.g., stenographers, file clerks, typists—will be outdated by automation and technology, they will be more than replaced with new programs that make use of emerging technology."[19]

Milbergs reported on the challenge to business education to meet the business needs of the future. He stated that business teachers play a crucial role in developing in students an understanding of the great issues involved in the transition to the new information technologies pervading all areas of society. He emphasized the need for student awareness of the global nature of business and the economic climate that business requires to fulfill its mission. Economic climate must be characterized by freedom. "One of the great strengths of the free enterprise system is the freedom it provides business to adapt to rapidly changing conditions."[20] This adaptation to change requires employees who are flexible and can cope with the dynamics of change in the work setting. Businesses must respond quickly to change if they are to survive.

Another type of change has been identified by the increased need to serve larger numbers from the adult population. "Technological change will send as much as half the labor force back to school for training or retraining in the coming decade, roughly twice as many as are presently enrolled in some form of adult education."[21] Although such factors as worker displacement, shortages of skilled labor, and international competition are listed as reasons

[18]Hoyt, Kenneth B. "How the Work Turns: Tomorrow's Jobs and Business Education." *Business Education Forum* 40:3-8; December 1985.

[19]*Ibid.*, pp. 7-8.

[20]Milbergs, Egils. "Business Needs of the Future: The Challenge to Business Education." *Business Education Forum* 36:4; May 1982.

[21]Bottoms, Gene. "How Are We Responding to Change?" *Voc Ed* 60:11; May 1985.

for needing this training and retraining, an attempt should be made to provide for a continuous update in curriculum content in an effort to keep instructional programs up to date technically.

With the changing technology in today's business office, new roles are being created. Hennington reported on a survey of professional secretaries and their executives which dealt with the impact of electronic office systems on information processing in the workplace. Secretarial respondents in the survey "indicated that technology is providing opportunities for persons who possess the ability to adapt to the new tasks demanded by the rapidly changing business environment."[22] She cited the need for more extensive background in principles of supervision since this responsibility is becoming more commonplace for secretarial personnel.

The area of business communication is another one in which a technological revolution is occurring. We are quickly approaching the time when the traditional dictated, typed, mailed correspondence is becoming obsolete. The office setting is becoming one of change—from ordinary forms of communication to electronic mail, from time-consuming travel to teleconferencing, and from file cabinets to computerized storage of records. Vocabulary in the automated electronic office today includes terms like teleconferencing, intelligent terminals, voice mail, electronic mail, databases, text editing, micrographics, optical character readers, data processor, and electronic dictionary.

One of the important considerations in today's office is that of time. With the availability of sophisticated equipment and the relative ease with which it can be implemented and operated, the trend toward more use of high technology will continue. Businesses must plan for productivity and profitability. Again, business educators are challenged to prepare students for the functions performed in high-tech offices of the future.

There is a need to prepare workers for the modern office who possess a proper balance of skills. The types of skills employers deem necessary were categorized into the two main categories of General Office Competencies and Changing Technology Skills by O'Neill and Parat. General office competencies were further described as the five competency areas of (1) effective communication skills, (2) keyboarding proficiency, (3) transcription competency, (4) proofreading skills, and (5) personal characteristics. Although these are extremely important, the business teacher tends to take them for granted while striving to keep abreast of emerging technologies.[23] Changing technology skills which impact on the office environment were listed as (1) acceptance of new technologies, (2) understanding the automated office management information system concept, (3) information processing skills, and (4) adapting to a machine-oriented environment.[24]

Acceptance of the new technologies is dependent upon involvement.

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[22]Hennington, Jo Ann. "Will the Changing Office Affect Secretarial Education?" *Balance Sheet* 65:27. January/February 1984.

[23]O'Neill, Sharon Lund, and Parat, Elaine M. "Balancing the 'Skills' of the Modern Office Worker." *Journal of Business Education* 58:68. November 1982.

[24]*Ibid.*, p. 69.

Business teachers must become aware of the new technologies as well as the types of change which they bring to the office environment. "Direct contact with business and industry has become a vital necessity for becoming aware of and for assessing new and current office technologies."[25] Business educators must accept change and prepare students with current information and skills required in using new technologies.

An understanding of the automated office is necessary to give the office worker a grasp of how the work flows and how people interact within this integrated system. Along with this knowledge comes the realization that a wide range of career options exists in the modern automated office. Opportunities for advancement are available for those who are productive and receptive to change.

STRATEGIES FOR ADAPTING TO CHANGE

Several topics have been identified which should strengthen the curriculum in preparing students for career changes. As the business educator reevaluates the curriculum and plans for the current needs of students and the workplace, the following suggestions are offered for consideration.

Provide up-to-date curriculum content. In this age of new technology, it is important that students receive instruction which will qualify them for initial employment and prepare them to adapt to necessary changes. The instructional material in business education must be current, and classroom laboratories must be properly equipped. Students who do not receive hands-on experience on some type of microcomputer will be at a disadvantage. One of the keys to student success will be how well they have learned to be flexible. Students should understand that equipment used in school may not be the exact type that will be used by their employer. There may be instances when an employer chooses to use office procedures that are different from those learned in the school setting. In order to teach for understanding and flexibility the business teacher should use case studies, simulations, role playing, and as many different types of equipment as possible.

Students also need to understand that entering the world of work is not the end of education. Since education is a continuous lifelong process, it is highly probable that there will be demands for continued learning on the job. It may be necessary in some cases to pursue formal education or become involved in retraining to remain employed or advance on the job.

Preparing students still involves more than just new technology. There are a number of objectives which have been part of instruction all along. Student attitudes, ethical values, communication and computational skills, and organizational skills are only a few.

Provide career education activities. In working with other educators in the career education process, plan for a variety of awareness, orientation, and exploratory experiences that relate to business careers. It is extremely important that students make career decisions from a sound information base.

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[25] *Ibid.*

Those students interested in the preparatory business curriculums should be fully aware of the career options available to them and how their abilities and interests match up with their particular career aspirations. This process of informed career decision making should cause more students to be satisfied with their career choice.

Provide decision-making skills. Students need to develop skills which will be useful in the office setting when a decision is required. Appropriate activities in career education should have exposed students to these skills, but teachers need to provide activities throughout the curriculum which will allow students to learn and apply them. The skills used in decision making closely parallel the steps in scientific problem solving.

The first step is that of identifying the problem for which a decision must be made. Alternatives need to be identified and supported by as much information as possible. A determination is made as to which alternative appears most acceptable in view of the total situation. A plan of action is then taken to implement the decision. If an evaluation indicates the action taken was not satisfactory in solving the problem, the process is repeated to allow for other alternatives to be tried. These skills can be taught through case studies and simulated office exercises.

Daggett and Marrazo presented six major principles to be used in teaching and evaluating affective domain factors in student learning. Of these six principles, they stated that "probably the most important areas within the affective domain with which we will deal in teaching the business education curriculum are problem solving and decision making."[26]

In describing the Business Dynamics course offered in the State of New York, Wenz presented information on the Decision-Making/Problem-Solving Unit.

> The unit begins with an outline of the steps used in solving a problem. Students consider alternative solutions to problems until the best decision for the individual at that particular time in his/her life has been reached. Constant reevaluation of the changing needs in an individual's life is stressed.[27]

Provide activities for learning how to learn. According to Laster, "Many vocational teachers concentrate on developing students' abilities to follow structured directions; recall specific information by naming, listing, reproducing; use machinery and other technology after demonstrations; create detailed models, checklists or charts; and use rules to resolve routine problems."[28] She recommended a full spectrum of learning skills regardless of the career path chosen by students. These include:

- Brainstorming
- Comparing and contrasting situations to gather information
- Creating alternative products or procedures

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[26]Daggett, Willard R., and Marrazo, Martin J. "Decision-Making Skills in the Affective Domain." *Balance Sheet* 64:145; January/February 1983.

[27]Wenz, Michael F. "Innovations to Business Ed Curricula." *Balance Sheet* 64:212; March/April 1983.

[28]Laster, Janet F. "Helping Students Learn To Learn." *Vocational Education Journal* 60:33; August 1985.

- Illustrating ideas visually
- Summarizing main ideas from spoken or written information
- Developing new rules for handling unforeseen problems by comparing the new problem with similar past problems
- Learning from others on the job by asking effective questions
- Gathering information about feelings, likes, and dislikes
- Organizing and learning through group projects.[29]

SUMMARY

Preparing students for career changes has emerged as an important need in the business education curriculum. More than ever before, students entering the workplace will be required to be flexible. The dynamic business setting in which students will work and interact as producers and consumers already requires an ability to adapt and change.

Teachers must understand change and the process through which it occurs in order to plan for effective change. As pointed out in the steps of change process, a continuous evaluation of programs should bring an awareness of current needs and potential means through which those needs can be met. An awareness requires action on the part of teachers. Rather than being on the receiving end of mandated change, teachers should become agents of change. Involvement in professional business education associations provides an information base for what is new and emerging in business education. By continuing education through professional readings, meetings, and research, teachers remain up to date on trends, issues, and innovative practices.

A close look at the business program content should be a routine task. The business educator should seek out answers to questions such as the following. Are the students receiving a proper balance of skills? In addition to learning required technological skills, can the student perform in a decision-making situation. Does the student understand that the modern office requires flexibility, and has the student learned how to adapt to change? How can the instruction be improved over the current procedures? Are there more effective ways that should be considered in preparing students for the workplace?

Answers to these questions must serve as the basis for planning necessary change. The business teacher should serve as a model for change in providing students with the best possible career preparation. The challenge to prepare students for career changes will be met by those teachers who are receptive and prepared for change themselves.

[29] *Ibid.*

CHAPTER 3

Human Relations Skills for the Changing Office

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The past decade has brought the greatest change ever witnessed in the business office. Business educators, always responsive to change, have been called on to incorporate technology that has impacted every facet of the curriculum. Networking, telecommunications, data communication, robots, intelligent copiers, micrographics, and graphic display are impacting businesses and prompting new requirements for employees in the arena of human relations. Business educators have learned new technology, "retooled" their thinking, restyled their curriculums, and as a result, are preparing their students well for technological positions. While technological training is important, it will not prepare students for success in a chosen career unless those students have good "people" skills—the ability to work well with people of all ages, classes, backgrounds, and educational levels.

Business educators are teaching students to face the challenges of the changing business world. In addition, business educators should prepare students who are well adjusted and productive members of society—students who approach even routine tasks with zeal. The responsibility of the business educator, therefore, is to teach tangible skills of keyboarding, accounting, data processing, and word processing while simultaneously stressing positive human relations in every facet of the curriculum.

In the past, training for basic interpersonal relationships was considered a part of the student's home training; however, with the divergent life-styles and the emphasis on careers for women, there appears to be less time available for this important training in the home today. The responsibility for human relations training now rests with educators and should be considered an integral part of the business education curriculum.

The relationship between management and employees is also changing in many companies. In the past, management retained control and authority, and the employees were simply paid for the work they accomplished. Today management in many large companies recognizes the many needs of employees other than salary requirements. Corporations are seeking to tap human assets by providing more challenging work, participation in the decision-making process, and opportunities for upward mobility. Employees are influencing policies that affect them and are more likely to demonstrate loyalty to their companies.

With increased opportunities to participate in management have come greater expectations of employees. Today's business employee must solve

problems in the workplace, develop new competencies, and produce in a more competitive atmosphere. Although these new requirements result in increased stress, employees appear to have a greater sense of satisfaction.

Today women are more likely to enter the work force in positions other than secretaries, clerks, and word processors. Today's women are more assertive in their career expectations than the women of yesterday. Many women are moving into management positions which offer challenge, prestige, and higher salaries. The human relations arena for women has changed tremendously in the past decade as women adjust to more responsibility, stress, and challenge.

The fact that the women's movement has coincided with the wave of new technology has thrust many new human relations problems on employees. As women move into management, both men and women are having to reassess their values, ideas, and opinions. Women are having to learn to manage employees which include men and older employees. Men are being required to learn to function equally as well under the direction of women managers as they do under their male counterparts. The new and emerging role of women has created many different situations that employees must learn to manage. Coupled with the pressures and changes brought about by the rapid technological change taking place in the business arena, new expectations of women have naturally caused increased attention to be given to human relations in offices.

In preparing students for employment, business educators review new demands in the area of human relations; the stress of change and new skill development; the impact on relationships brought about by the changing role of women; and the inherent problems associated with new opportunities for challenge, participative management, and career mobility.

NEW AND EMERGING HUMAN RELATIONS SKILLS

While developing the traditional human relations skills remains an important responsibility of business educators, they must also be aware of new and emerging "people skills" required for the changing business office. Students are required to adapt to situations in offices today that were of less importance a few years ago. Important topics for human relations training today include assertiveness training, stress management, quality circles, sexual harrassment, and ergonomic-related factors created by technological advancements.

Assertiveness training. Business education students need thorough preparation in assertiveness training with primary emphasis in differentiating between appropriate assertiveness and inappropriate aggressiveness and passiveness. Students need to learn to identify their basic human rights as well as to recognize strategies for ensuring that their rights are honored.

In presenting assertiveness training, educators can use many available books as resources for the development of this skill. Assertiveness inventories which help participants identify areas where they are either too passive or too aggressive are valuable aids and are easily located. Students can be

assigned oral and written reports on assertiveness topics. Assertiveness topics for discussion or reports include:

- Decision making
- Expressing opposing views
- Arguing fairly
- Controlling emotions
- Accepting and giving compliments
- Refusing unreasonable requests
- Dealing with anger appropriately.

Managing stress. New pressures created by technology and different requirements for women have made the study of stress factors an important part of the curriculum. As researchers report more about stress-related diseases, it becomes obvious that students must be taught to control and relieve tensions created by the pressures of learning new equipment and software, demands to produce more, and expectations to be a "super employee" as well as a "superwoman or superman" at home.

Ways to relieve stress may well be some of the most important activities students can learn. In addition to stress inventories, teachers can use reports, speakers, and "stress journals" as methods to train students to deal with stress in their jobs and personal lives. Related topics to be included are:

- Types of stress
- Causes of stress
- Stress-related diseases
- Exercise and nutrition
- The impact of positive attitude and goals
- Corporate gymnasiums and exercise programs.

Quality circles. Quality circles that include members from the ranks of top management to the lower echelons have been established in many companies. Quality circles are teams designed to improve productivity through the discussion of common problems. Japanese management first capitalized on the quality circle practice, and American corporations have quickly followed suit. Business educators can bring the "real world" into the classroom by incorporating the quality circle concept using hypothetical business problems. Rules to use are:

- Keep quality circles manageable—eight is the optimum size.
- Members should come from the same area.
- Members should work under the same supervisor.
- Supervisors should not make decisions for the group but they can participate.
- Participation is voluntary.
- Members select the problem to discuss.
- Members gather data to use in solving problems.
- Decisions are presented to management and incorporated if considered to have merit.

Incorporating the quality circle concept into the business education curriculum is a viable method of bringing new management practices into the classroom. Quality circles promote teamwork and creativity as well as foster pride, problem-solving ability, and cost reduction.

Sexual harassment. Once considered a taboo subject, sexual harassment is today a widespread phenomenon that should be included in human relations training. Since young, entry-level employees are likely targets of sexual innuendos and unwanted advances, they need to be taught appropriate strategies for handling this unprofessional behavior.

While articles and books are available for research, perhaps the best resources for this topic are speakers who are personnel from EEOC offices. These employees can explain the laws and options available to employees who face sexual harassment.

Additional topics of interest include:

- Office romances
- Office politics
- Affirmative action.

Ergonomic-related factors. The introduction of new technology into offices has been accompanied by a plethora of new human relations factors. Human relations training that omits ergonomics-related factors is inadequate for students today. New technology has increased productivity, made information more accessible, and speeded up the flow of data; but these improvements have not been accomplished without a price—new human problems.

Many interesting topics for reports, discussions, and role playing are listed below:

- Telephone tag
- Flaring or verbal overkill
- Juggling electronic calendars and tickler files
- The management and impact of rapid change
- Resistance to technology
- "Turf" protection
- Fear of "looking bad"
- Physical discomforts—fatigue, eye strain, backaches, headaches, stress
- Lack of privacy in open offices
- Fear of being displaced
- Selecting ergonomically appropriate furniture and equipment
- Creating an ambient environment—luminous, sonic, thermal, spatial
- "Operator friendly" equipment.

DEVELOPING A POSITIVE SELF-IMAGE

A successful person has a good feeling about himself/herself; this is the most basic of all human relation concepts. Before an individual can develop

a positive relationship with others, one must respect and like oneself. This is not to imply that the person who has a positive self-image will have no problems, but persons who possess a positive self-image will be able to cope to a greater degree with the problems thrust upon them in their daily lives.

Goal setting. Long-term and short-term goal setting is one of the most important aspects of developing a positive self-image and should be stressed by the business educator. Students need to learn to write goals for the day, the week, the month, the year, the next five years, and the next ten years. Business educators should teach students that long-range goals are seldom accomplished without first reaching short-range goals. Students should be taught to set deadlines for the completion of goals since deadlines are imperative to successful goal setting. Educators must emphasize the following points when teaching students to set goals:

- Goals must be reasonable.
- Goals must be challenging.
- Goals must be realistic.
- Goals should incorporate needs, values, and abilities.
- Goals must be specific.
- Goals must be prioritized.
- Goals must be flexible.

Students need to recognize the fact that they may find obstacles which keep them from reaching their goals and that they need to make plans to overcome them. Some obstacles may be overcome through a thorough study of what is involved in reaching the goal (for instance, a career objective). Some additional guidance counseling may be necessary, and a reassessment of related financial problems may be in order. In helping students to overcome financial problems associated with educational goals, teachers must alert students to scholarships and work opportunities.

If students embrace the above steps in setting short-range goals, they should then be able to adapt the same steps in completing their long-range goals. Teachers must teach students to deal with procrastination and discouragement as they attempt to complete their goals. Students will need encouragement, direction, and empathy as they face obstacles that stand in the way of the accomplishment of their goals.

Personal appearance. Another important aspect of a person's self-image is his/her personal appearance. Business educators have many reference sources in the area of professional dress, because appropriate office dress has been researched and defined by experts. Although John T. Molloy's book *Dress for Success* is not the bible of the business sector to the extent it once was, many of the stipulations expressed in his book are still viable. Molloy's suggestions for color, style, and fabric selection are as timely today as ever, and these suggestions should be emphasized for both male and female students. The best lessons on dress are learned from professional business educators who "practice what they preach." In addition to personal appearance, personal hygiene should be stressed.

Self-confidence. Most students can gain self-confidence if the teacher judiciously praises them. Teachers can help students grow if the students feel that the teacher is interested in them as individuals. Teachers should provide definite standards, be sure students understand these standards, and reward students with appropriate praise when they reach them.

Teachers should demand excellence while convincing students that they can accomplish what is expected of them. Educators need to create a warm, challenging atmosphere in which the student can work. While discipline is necessary in the instructional process, a student's self-confidence can be improved, rather than destroyed, if teachers remember that discipline means to "shape and to mold"—not to criticize and frighten. One of educators' greatest responsibilities is to nurture and build each student's confidence.

Goals, personal appearance, and self-confidence are all important in helping students create a positive self-image. Students also need to:

- Recognize their strengths as well as their weaknesses
- Take charge of their lives assertively
- Analyze their habits—good and bad—and change those habits that need to be changed
- Believe in themselves
- Develop self-respect while respecting others' rights
- Establish strong values and stand up for those values
- Develop patience for themselves and others
- Develop sensitivity
- Develop empathy for other people's problems
- Develop positive attitudes.

DEVELOPING INTERPERSONAL AND LEADERSHIP SKILLS

In addition to creating a proper self-image, students need to develop positive interpersonal skills. Following are some skills that need to be developed.

Communication. In order to have positive interpersonal relationships with other members of society in social and business activities, the individual must be able to influence others through frictionless communication with them. Successful business leaders must have communication skills that enable them to work with and through other people to accomplish their goals. A leader is one who gets other people to do what he/she wants them to do without balking.

It has been estimated that 55 percent of communication is facial and body posture, 38 percent is voice tone, and only 7 percent is accomplished via the words that are used. Frequently, the business education curriculum stresses the reading and writing part of communication while neglecting the important aspects of listening and nonverbal communications.

Students should be taught to make eye contact with the person with whom they are speaking. If speaking to a group, the student should be taught to

make contact with at least one person in the audience. If contact is not made and eyes are averted, the impact of the message is likely to be lost, and the speaker is unable to see the response of the person to whom he/she is speaking.

Students should be taught to carry their bodies straight and to hold their heads erect in order to establish a self-confident presence that will merit the respect of the listener. Negative gestures such as folded arms and hands on the hips should be avoided as well as negative facial expressions such as frowning, raising the eyebrows, and lip biting.

With the advent of voice mail and audio conferencing, the listener does not always have the advantage of viewing facial and body posture. In some teleconferencing the camera quickly "pans" the participants, thus giving the viewer limited time to "read" the body language. In this case, the listener must be particularly attuned to the speaker's voice.

When teaching voice training, business educators should stress the following items to assist students in developing proper speaking voices:

- Clearness
- Modulation of voice
- Avoidance of monotones
- Calmness.

Listening. With the changes in technology in the automated office, particular attention has been focused on active listening. Most students have poor listening skills, retaining as little as 25 percent of what they hear. The ability to listen well, documented as a crucial skill for supervisors and employers, will serve students throughout their educational and business careers. Helping students develop good listening skills is one of the most important duties of business educators. Listening will help the students to know and understand the people involved in their lives and will help them develop better interpersonal relationships.

Some of the techniques of effective listening that should be stressed are:

- Concentrate on what the speaker is saying.
- Do not allow your mind to wander.
- Listen for new ideas and be open to these ideas.
- When possible watch for body and facial expressions.
- Listen with understanding.
- Listen with empathy.
- Maintain eye contact with the speaker.
- Ask questions, when possible, to clarify misunderstanding and to give speaker feedback.
- Be cognizant of distractions and, if possible, remove or reduce them.
- Take notes during a speech or lecture, recording the main points of the speech.
- Rephrase and repeat in your mind what is being said.
- Be aware of your emotions and listen to the emotions expressed by the speaker.
- Give the speaker your full attention.

- Avoid turning the conversation in your direction.
- Don't interrupt.

Teamwork. Educators must encourage students to work together as a team, teaching them to be cooperative and sensitive to others. Students must recognize and strive to reach the goals of their department and company as well as their individual goals. They need to develop the ability to make decisions that will strengthen the team as well as the individual. If they are to be effective, students will need to develop responsibility, loyalty, dependability, and tact. The team member must understand the necessity of downplaying individual competition while working cooperatively as a unit if the tasks of the team are to be accomplished. The team members must understand the part each member of the team will play in accomplishing work. Someone in the group will become the leader, but each group member has a role to fulfill. Students need to understand that dependable followers who meet their responsibilities are as vital to a company's success as its leaders.

Criticism. Students need to be able to cope with criticism and learn from it. They must be able to accept constructive criticism and determine if the criticism is deserved. If the criticism proves valid, the student must be able to make behavior changes needed to overcome the problem.

Everyone lives with criticism; few like it, but most people can learn to use constructive criticism as a means of improving. Opportunities to role-play responses to constructive and destructive criticism can help prepare students for dealing with criticism as an employee.

Decision making. Every student is involved in making decisions from the time he/she wakes up until time for bed. Decisions may be as simple as what to eat for breakfast or as complicated as which college to attend. The decisions the student will face in the business world will affect his/her performance and productivity and may mean the difference between success and failure. People in positions of leadership make decisions that will not only affect their lives but others' lives as well. Life is a series of choices, choices which impact our lives positively or negatively. Students must learn to weigh the pros and cons of a decision and make wise choices. Teachers need to force students to make more of their own decisions by refusing to "spoon feed" directions to them.

Decisions have been divided into three categories: (1) instinctive—those which feel right; (2) judgmental—those which are dependent on past experiences or on knowledge; and (3) decisions which involve rational problem solving. Rational problem solving is the kind of decision-making ability which educators should encourage students to develop. The following problem-solving elements should be used to help students solve problems:

- Study the problem that is causing the conflict.
- Consider all the choices that can be made.
- Weigh the merits of each alternative.
- Choose a solution.
- Implement the solution.

Teachers must remind students that some problems may be so complex that they will require consideration by another person. They should be cautioned to confer with superiors when a particular problem becomes obviously beyond their abilities.

Conflict. Conflict is inevitable in the lives of all people, particularly among people who work closely with each other. Since conflict is quite common in the office setting, teachers should help students resolve conflicts by having them identify problems and by having them find ways to solve the problems in a mutually beneficial manner. Having students role-play situations dealing with conflict provides a realistic learning experience. Students must be taught to compromise if a situation has reached a stalemate. One of the primal principles of conflict resolution—"I win, you win"—should be emphasized. If the students can incorporate a "win/win" philosophy in their personal relationships, most of their conflicts can be resolved.

Anger. Conflicts usually involve anger. The successful leader must learn how to handle his/her own anger as well as others'. Educators must help the students learn to control their tempers so that they will be able to deal with anger effectively. Anger may be handled through physical activity or through a calm confrontation with the individual(s) causing the problem. Those in charge of students' development should teach them to prepare adequately for confrontations. Students should understand that confrontations are quite often unpleasant experiences, but in some instances, confrontation is the only solution that will "clear the air." Anger is a natural, healthy, human emotion; learning to deal with it effectively is absolutely essential.

ADDITIONAL TECHNIQUES FOR TEACHING HUMAN RELATION SKILLS

Before delving into the many facets of human relations, students need to understand the importance of human relations and why it is being included in their curriculum. They should be told that more workers lose their jobs because of their inability to get along with fellow workers than for any other reason. Class discussions detailing what employers expect should precede the study. If students are to benefit from the study of human relations, they must understand what employers expect. Many employers have stated that some of the things they look for are cooperative attitudes, enthusiasm, practical expectations, and punctuality. If they are to function effectively in their jobs, students must have a thorough understanding of employers' expectations.

Many techniques can be used in developing positive interpersonal skills. Since great emphasis has been placed on the subject in the last several years, there are many educational materials published for use in the classroom.

Role-playing, class discussions, and simulations are always effective mediums. Office managers, personnel managers, and charm and modeling school personnel are excellent resources for bringing realism into the classroom. Audiovisual presentations that present problems in an interesting manner and provide a constructive teaching situation should be incorporated and followed by related classroom discussions.

Many textbooks now include case studies that can be used to teach human relations. Magazines such as *The Secretary* include pages devoted to problems that can be discussed or role-played.

Essay-type questions may be used effectively. Some questions should require students to think and formulate answers for personal problems. Writing about personal problems and discussing the problems privately with a teacher are often effective outlets for troubled young people, but teachers should be very careful when evaluating personal reports. Since teachers may not have the counseling training to properly evaluate students' problems, they should always be willing to seek outside help if they think it is justified.

Students may be required to keep journals of their activities reflecting their strengths, weaknesses, and bad and good habits. These may be read by the teacher, and appropriate notations recorded to help students. Again, instructors must be very careful in their assessments and seek professional assistance if problems appear to be serious. Teachers often encounter difficult problems —sexual abuse, emotional abuse, alcoholism, drug addiction, and others— and these problems must be solved if the student is to function effectively. Serious problems are the responsibility of every classroom teacher! Who will help children if their teachers don't? Although teachers may not be able to solve a problem, they can locate experts who can offer counseling to students.

Students may be asked to write a paper about the person they plan to become five or ten years in the future. These papers can give insights into the students' goals and will assist them in planning and reaching their goals. Career opportunities may be explored through audiovisuals, speakers, and visits to local colleges and technical schools. Job interviews may be conducted in the classroom by visiting personnel directors. While this activity may be stressful for students, it is one of the most effective simulated activities teachers can use.

The teacher as a model. Business educators must have good interpersonal skills themselves in order to teach these skills to others. Since students emulate what they see in the classroom, educators should be generous with praise when possible, treating every student as if he/she were wearing a sign with the words "Make Me Feel Important" written on it. When reprimands are necessary, they should be short and specific. Reprimands should be begun and finished with praise. Teachers should never miss an opportunity to make students feel good about themselves even during a reprimand.

Educators need to remember that a happy environment increases production in the classroom, as well as in the business office. Laughter enhances relationships and eases tension. Students like to laugh with their teachers. Teachers who can laugh at themselves teach students a valuable lesson—the ability to turn humor on themselves. Business educators need to find reasons to laugh with students; they will remember the lessons much longer and the example you set forever.

Teachers must be calm in the face of dilemmas while maintaining their poise and controlling their tempers. What better example for students than a teacher who is a model of self-control!

Business educators must approach classroom work with enthusiasm.

Teachers should be caring and persistent in their demands for excellence, while striving to stimulate students' desire for knowledge. Students should be reminded that completion of secondary school should not be the end of their education—only the beginning. Classroom teachers should repeatedly encourage students to continue their formal education if possible. Many students fail to continue their education because no one ever made them believe they could. Teachers need to be very careful in putting parameters on developing students. Teachers need to expect great things of their students. They, in turn, will learn to expect great things from themselves.

Business educators must strive to be the example of everything they expect of their students, remembering that students rarely give more than the teacher gives. What an awesome responsibility teachers have to serve as role models for young people!

CONCLUSION

Business educators must not be so intent on teaching technological skills that they miss the opportunity to instill in their students positive human relation skills. If these skills are omitted from the business education curriculum, most students will probably not be prepared to succeed as workers and leaders in the business sector. To be complete, every business education course must have planned emphasis on human relations development.

The technological office is becoming commonplace. As we "settle in" and adjust to new ways of handling information, our students must adapt to new and emerging human relations problems brought about by a changing society. In addition to the traditional human relations problems, today's business educators must address stress-related problems, assertiveness training for managers, conflict resolution strategies, and the inherent problems associated with professional competition. As technology evolves, employees must accommodate changes in the work environment. Human relations must, therefore, never be taught as a stagnant, static subject, but as an evolving process that is vital to employees' success in the changing office.

CHAPTER 4

Integrating Business Education Technology Into the Elementary Curriculum

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An enormous tidal wave is before business education teachers. Are we ready to ride to the crest of this wave, or will it disappear before our eyes? The ever growing number of computers in our elementary schools and the inability of elementary school children to operate these computers with facility is crying out for the business educator to step in and fill this gap in the area of keyboarding skills and the parallel language arts activities that will accompany this skill.

NEW YORK STATE POSITION PAPER

Many states have begun to institute programs of keyboarding in the elementary school. In 1984 the New York State Board of Regents Action Plan to improve elementary and secondary teaching included the following statement: "Instruction in keyboarding will be included in the state-developed English Language Arts Syllabus." One of the most promising developments of the use of electronic keyboards/computers in the schools is their potential impact on the language arts program. The position paper in New York State entitled "Guidelines for Elementary School Keyboarding Instruction" further states that "keyboarding is an important enabling skill for developing competence in (1) keying in responses to interactive educational drill and practice coursework, (2) accessing information from a database, (3) participating in computerized learning games and simulations, (4) organizing and analyzing data, (5) recording ideas, drafting, revising, and editing writing."[1]

In this position paper, the following general guidelines were offered: "(1) keyboarding instruction shall be integrated as an enabling skill for manipulating data and ideas. (2) Instruction would be provided at the grade level in which students are first expected to use electronic keyboards in learning situations. (3) Instruction would focus on correct fingering techniques, from home row locations with emphasis on accuracy rather than speed. (4) Sequential and cumulative introduction of new keys with opportunities for practice and application are essential. (5) Brief, "frequent," scheduled instruction is more beneficial than random, sporadic, and lengthy practice sessions. (6) Keyboards (electric typewriters or computers) should be readily available for students to use independently. (7) Furniture and equipment

[1]New York State Education Department, "Guidelines for Elementary School Keyboarding Instruction," 1985.

should be adjustable to accommodate a range of pupil sizes. (8) Instructional materials should be appropriate for the developmental level of pupils for whom they are intended. (9) In order for pupil learning to be most effective, it is important that elementary classroom teachers have adequate training in the goals, objectives, and methodology of keyboarding instruction. (10) Teachers responsible for providing keyboarding instruction should be familiar with the strengths and limitations of instructional support materials. (11) Business education teachers should be called on to assist in the development of keyboarding curricula, inservice training, and selection of materials and methodology."

HISTORICAL PERSPECTIVE

Keyboarding instruction and its tie-in with language arts instruction in the elementary school is not of recent derivation. As early as 1895 Kasson was experimenting with it, followed by Wood and Freeman in 1932, John Rowe in 1959, Casad in 1969, and many others in the 1970's and 1980's. A great deal of research has been done by John Henry Martin dealing with the talking typewriter which dates back to the early 1960's, and his recent research with the Writing To Read program through IBM deals with the value of the keyboard and subsequent integration of language arts activities. The current impetus, of course, for keyboarding instruction comes from the deluge of computer hardware that has started to infiltrate the public schools in the United States. Keyboarding can be taught as a part of the language arts teaching time in the elementary school because of the integration of language arts skills. The success of the classroom experience for young children depends to a large extent on the rapport that has been established between instructor and student. Fortunately, students of all ages like to type/key. The important thing to keep in mind is that keyboarding should be taught prior to or in conjunction with the microcomputer experience. Unfortunately, there is no short and easy way to learn how to keyboard. It is the instructor's job to make the instruction as palatable as possible for young children to reach a comfortable familiarity with the keyboard.

The position paper of the Policies Commission for Business and Economic Education entitled "This We Believe About Keyboarding" clearly states that "keyboarding is defined as the act of placing information into various types of equipment through the use of a typewriter-like keyboard. Typewriting and keyboarding are *not* synonymous. The focus of a keyboarding course is on input rather than output."[2] Keyboarding will complement typing rather than replace it.

CERTIFICATION IMPLICATIONS

Certification in the teaching of keyboarding at the elementary school may be a problem in some states. In New York State, both common branch

[2]Policies Commission for Business and Economic Education. "This We Believe About Keyboarding." Reston, Va.: the Commission, 1984.

elementary school teachers and business education teachers are certified to carry out the instructional process. However, there has to be a "wedding" between elementary teachers and business educators to get the keyboarding job accomplished. Obviously, the best person to do the instruction is the business education teacher, but sometimes certification will not permit this, except perhaps as an assistant to the elementary teacher. The business education teacher can offer inservice education to elementary teachers. In any event, if the business education teacher offers the instruction, there has to be a close working relationship between the elementary school teacher and the business education teacher for the integration of language arts activities taking place in the elementary classroom.

CONCERNS IN IMPLEMENTATION

Since most business educators have dealt with secondary and/or post-secondary students, they have many questions dealing with the teaching of keyboarding at the elementary school.

1. How can I go about implementing elementary school keyboarding in my school district? With the decline in enrollment, are there any periods during the school day that typing and/or computer rooms are not being utilized? Are typewriters or computers available before or after school? Are typewriters/computers available during the summer vacation period? Students can be bussed to the junior or senior high schools to use available equipment.

2. What is the best time of the day to offer the keyboarding program? The ideal time would be when students are fresh and "raring to go." Less ideal times are right before lunch and at the end of the school day when students' attention level is at a low ebb.

3. Where would student "pull-out time" come from? Since keyboarding is so closely linked with language arts activities and writing-in-the-content area, the time for keyboarding instruction would also come from the English/language arts time segment of the school day. With the skills of reading, spelling, and other language arts emphasis woven into the keyboarding instruction, students can transfer this learning to composition and story writing either at the typewriter or computer (with the aid, of course, of a simple word processing program).

4. What materials can I use for keyboarding instruction? There are already textbooks on the market written for an early elementary school level with emphasis on language arts activities and skills. Depending on the computer used, a simple word processing program can be adapted for keyboarding instruction and later for the story writing and composition segments. Software instructional packages are also on the market which can be used after the initial keyboard instruction for reinforcement purposes. In an article on selecting materials for keyboarding instruction, B. June Schmidt lists some limitations of software instructional packages, including the repetitive nature of the instruction, overuse of nonsense materials, limited vocabulary and practice materials, complicated exit procedures, nonproductive waiting time,

and the high cost of programs (especially if every student must have a copy).[3] The keyboarding teacher would do well to weigh all factors before selecting materials to use in the course.

5. At what grade level should elementary school keyboarding be taught? Obviously, the only legitimate answer to this question should be at the time that computers will be used by students in meaningful projects. Although students in kindergarten may be exposed to computers, they would be making use of the computers only to identify alphabetic letters, words, etc. The same situation would probably be true of first graders. Students should have some degree of fluency in reading in order to bring about a fluency in writing. In a survey done on December 5, 1983, by the Shoreham-Wading River School District (on Long Island in New York State), the following conclusions were made: (a) Third grade students can successfully learn touch typing. (b) Students who hunt and peck are at a disadvantage when learning the correct form of touch typing/keyboarding. (c) Touch typing/keyboarding skills should be taught to students at the time they use microcomputers with frequency. (d) The touch typing/keyboarding course should be taught on a daily basis over several weeks.

6. How long a period of time should it take to teach keyboarding? It is difficult to specify an exact amount of time. Generally, in a period of 30 minutes per day on *consecutive* days for eight weeks, students should be able to learn the alphabetic and numeric keys, basic computer concepts, basic word processing, and language arts skills integrated into the instruction. If you do not want to include all of this, less time could be allocated. Remember, the purpose of learning how to keyboard in the elementary school is not an end but a beginning to using a word processing program to develop composition and story writing skills.

7. Should students be taught at the typewriter or at a computer? Obviously, it would be better to use the computer for instructional purposes. However, most of the keyboarding skills could be learned on either the typewriter or the computer, and the transfer of learning from typewriter to computer would not be a complicated procedure. One thing to watch when using a computer is that a "playful" student may decide to hold down a particular key, using up a great deal of memory. When using a computer, it is most important to have a printout of what the student has accomplished to send home to parents. Since printing on a daily basis would take valuable time from instruction, being able to print out once a week is sufficient, in most cases.

8. How should I present the keyboard—visually, orally? Just as you would use a variety of techniques in a secondary keyboarding class, elementary students should be exposed to direct dictation of letters, words, and phrases; keying from a textbook; using computer programs for reinforcement; the overhead projector and transparencies; and various duplicated handouts. Keep in mind when dealing with younger children that it is most important

[3]Schmidt, B. June. "Selecting Materials for Keyboarding Instruction on Micro-Computers." *Business Education Forum* 39:16; April 1985.

to use materials that illustrate upper and lower case letters since that is what children are accustomed to in their regular classroom.

9. How important is technique? Teaching proper technique is just as important as it is in teaching older students. Fingers should remain on the home keys. Student posture and position in front of the machine are important. Keep in mind that you may not have adjustable desks or chairs and might have to have students sitting on books to compensate. Wrists should be kept in a level position. The "pinkie" should be used for the return key—unless you are teaching automatic return on the computer. One of the areas that we, as business educators, will have to adjust will be the technique of "eyes on your copy." Anyone who has operated a computer or watched someone who operates a computer will tell you that the operator's eyes are "all over the place" watching the screen output, finding certain codes/symbols on the numeric pad, etc. We should strive for "touch typing" as we always have, but keep in mind with young children that we are not trying to make vocational keyboarders out of them; rather we want to allow them to operate the keyboard with facility so that they can function well with language arts activities.

10. How fast should I present the keyboard? Depending on the amount of daily class time, length of the keyboarding class, what other skills you want to teach, and the intelligence level of the group—particularly with early elementary students—one new key a day (or two if the group is bright) is enough of a learning load, especially if you are integrating oral and written language arts activities during the time of instruction.

11. How long should each session be? An ideal setup would be 30 to 40 minutes daily interspersed with short rest periods utilizing oral language arts activities.

12. Should we have classes that meet every day, every other day, or once a week? In teaching a motor skill such as keyboarding and working with younger children, there is only one obvious answer—every day. Even if instruction time is shortened, make it on a daily basis.

13. How can I provide students with a variety of instructional techniques? Keyboarding textbooks for younger children all have a multitude of suggestions for accomplishing this goal. The important thing to keep in mind is to have periodic rest periods and to keep changing activities.

14. How well can I expect students to perform? Students in elementary school keyboarding classes should be able to manipulate the keyboard with sound techniques and with facility. Dwelling on timings and words per minute should be discouraged. In the presentation of the alphabetic keyboard, reassure students that making mistakes is the way we learn how to keyboard and that we have easy ways with word processing programs to correct mistakes.

15. How do I deal with inadequate electrical requirements in the keyboarding classroom? If there are insufficient electrical outlets, a long cord with regularly spaced junction boxes will serve as a base for additional outlets for typewriter/computer equipment.

QWERTY OR DVORAK?

Should we be concerned with the QWERTY and/or Dvorak keyboard? With all of the equipment currently being produced, both computers and typewriters, and with voice recognition approaching in the 1990's, it seems logical to stick with QWERTY, but to keep a watchful eye on any trends in favor of the Dvorak keyboard. Several important questions remain unanswered. Will business endorse the changeover to Dvorak keyboards and the related expenses, considering the amount of retraining required for current employees? Will there be resistance from employees with the conversion to Dvorak? Will the educational establishment resist implementation of new keyboards? While studies have shown increased production with the use of the Dvorak keyboard, the other questions listed above need to be answered before any changeover takes place.

DON'T OVERLOOK THESE SUGGESTIONS

One of the most important concepts that children have to learn is handling "information." They have to know not only how and where to find it, but of more importance, what to do with it when they have found it. They have to learn to evaluate and categorize the information. The computer is the ideal way to help children spend the greater part of their time using the information in a constructive way.

Working with a keyboarding class of early elementary school children requires the patience of two saints—don't take anything for granted. Most of us are used to dealing with older students and assume a certain amount of maturity. In dealing with early elementary age youngsters, don't assume anything. Explain everything to the nth degree. When you tell youngsters to "put their fingers on top of the keys," be sure to say "directly on top of the keys" or you will have fingers raised at all levels over the keyboard. On the days that youngsters don't feel like keyboarding, and we all know that students have those days, you'll hear excuses like, "My chair is too low or too high; my desk is too low or too high." Be prepared with ready answers like, "Here is a chair that is lower," or "Sit on this dictionary, it will raise you up," or "Why don't you lift up or take the machine cover off your typewriter so you can see better."

In the initial stages of keyboarding presentation, watch out for the following and take corrective measures: (1) Bouncing the whole hand (physically hold your hand over theirs while they type). (2) Using the entire hand to hit the space bar (physically manipulate the thumb of the student as it hits the space bar). (3) Hiding the thumbs ("We need these thumbs so that they will be ready to hit the space bar; we'll play hide-and-seek later"). (4) Hands not on the home keys (you'll almost wish you had a tape recording of those words to play and replay, but keep reinforcing this very important concept). Remind students: Keep your wrists up so your fingers don't come off the keys. With students who have fine motor skill difficulties, pattern their hands as they type so that you make sure they are attaining the proper keyboard reaches with the proper fingering.

Your voice is an important teaching tool. Sing along with students in introducing new keys and in doing oral word drills. Young children love music, and the rhythm of your voice helps in making the various reaches to keys easier to accomplish.

The question of giving grades always seems to crop up. If you must give a grade, make it a pass/fail option. You can also use an anecdotal "report card" which details whether students have accomplished the goals of the class. Dress up the report card by taking pictures of your students at the keyboard and pasting the pictures on the cover.

When students make up words keying letters that have been previously learned, be prepared to hear off-color words on occasion. Counter those words by having a logical excuse for not using the word. Above all, don't make an issue of it. You can say, "We're not using that word today," and quickly go on to the next word.

Be sure you enunciate clearly with oral drilling of new letters and words. Some youngsters can have trouble distinguishing between *d* and *b* and *p* or between *n* and *m*.

INTEGRATING LANGUAGE ARTS

How can you integrate language arts activities during the instructional period and during the rest periods? (1) Spell out directions rather than always telling them in words or writing them on the chalkboard or overhead. (2) Spell out number problems, but limit them to simple addition, subtraction, and multiplication. (3) Spell out various activities to do during "rest periods" such as S-T-R-E-T-C-H. (4) Upon completion of the keyboard, have students type complete sentences in which they are given a choice of a correctly spelled word and an incorrectly spelled word. (5) Type out sentences dealing with appropriate vocabulary words having students substitute a word that means the same as the underscored word in a sentence. (6) Have students write stories about activities in which they are interested—eating, sports, television, etc. (7) Integrate, with the help of their regular teacher, activities that are taking place in the classroom. Let them practice their spelling words at the keyboard. (8) Leave a typed note in each student's typewriter/computer indicating something you want them to do.

Expect to be on your feet every minute of the time you are in class in the elementary school. Expect to be challenged with questions for all your actions in class. Expect to be told all about the children's personal lives and activities. Expect and be ready to deal with the world's champion tattletales—but also expect to love every minute of the time spent with them!

It is very important in dealing with young children to have a hard copy of what they've accomplished in class. If using a computer, it means scheduling time for the printout which should not detract from the time spent in learning the keyboard. Small children and their parents like to see, to hold, and to keep papers dealing with what students have accomplished in class.

WHO WILL DELIVER SERVICES?

One of the questions that remains to be answered is, Who will deliver the keyboarding instruction in the elementary school? Will there be a sufficient supply of business education teachers to cover this relatively new area of instruction? Or will business education teachers act in an advisory or consulting capacity and offer inservice training and workshops to elementary school teachers? In many cases, this inservice training might revolve around first teaching the elementary teacher to keyboard, to learn the operation of the microcomputer, and to learn various software application, particularly word processing applications including text editing and formatting.

What other function can the business educator perform at the elementary school level? The business teacher can function as a computer club advisor. The business teacher can provide background in the area of economics that can be translated to projects done in the regular elementary school classroom, e.g., a class project setting up a mock grocery store. The business teacher can be the "expert" in letter writing and in providing necessary background material in the area to the elementary school educator.

THE COMPUTER AND ITS PLACE IN THE ELEMENTARY SCHOOL

How do computer applications fit into the elementary school curriculum? After the keyboard has been covered, students could be taught a database program where they could accumulate facts about the history of their community. Some excellent programs are available dealing with supply and demand or with the construction of a school or class newspaper. Can word processing help the writing process? Students could write part of a story on the computer and pass it on to another student to complete another portion. They can be taught purposeful writing without worry of doing a paper over because a word was misspelled, etc. Both peer evaluation and peer collaboration can be a part of composition at the computer. The word processing program can be used for reports in all subject areas, for writing pen pal letters, for writing thank you letters for gifts, or for making up certificates of achievement.

In using a word processing program with young children, an upper and lower case screen is a must. Commands must be as simple as possible, with single keys if possible. The keyboard should be full-size typewriter style. Black and white monitors are preferable for easier readability.

For some disabled children, handwriting is such a laborious task and spelling correctly such a major obstacle that they can't be creative. With a word processing program and a spelling checker, the child can concentrate on content and style.

COMPUTER-ASSISTED INSTRUCTION

According to research, computer-assisted instruction is almost always effective in the areas of science and foreign language. It is usually effective in math and less effective in reading and language arts. The effectiveness of

computer-assisted instruction in terms of student performance continues to be a controversial matter, and cost-effectiveness is as yet unproven. There are basically six modes of delivery and interaction of computer-assisted instruction: drill and practice, tutorial, education games, simulation, problem solving, and word processing.

The necessary but often missing ingredient in our curriculum has always been appropriate student-oriented instructional materials that make it possible for the student to be in charge of and responsible for his or her own learning. The computer's potential lies in its capacity to complement the instructional process by providing self-paced personal instruction with immediate feedback, alternative tutorials, patient skill-building activities, and extension or enrichment experiences.

The interest, support, and leadership of the principal—or lack of it—is often the biggest contributing factor to the number of micros and peripherals available in each school. The greatest single factor in effective use of the microcomputer is the classroom teacher.

THE EFFECT OF ELEMENTARY SCHOOL KEYBOARDING ON SECONDARY BUSINESS CLASSES

After the initial instructional period in the elementary school, time must be allocated for regular periodic brushup of keyboarding skills. The business educator can take an active role in the brushup instructional phase. This brushup time could be integrated into the time spent in the computer lab or as a part of an elementary school language arts lesson. Students who already have a knowledge of keyboarding will spend time in junior/senior high school keyboarding classes refining their skill. Advanced keyboarding classes will teach correspondence and other office-related activities that would not be covered in a basic keyboarding class at the elementary school. Text editing, formatting, and office productivity will be major segments of advanced keyboarding instruction. At this time, it is difficult to project precisely what will happen because elementary school keyboarding skills are just beginning to infiltrate the school systems in the United States. It will be incumbent upon business educators to be alert for periodic changes in the curriculum which must be instituted because of early keyboarding instruction. Since each school district may be starting this instruction at a different grade level, no hard-and-fast rules can be followed. The most important thing to keep in mind is that the skill of keyboarding must be continually reinforced for maximum productivity of learning.

SUMMARY

Business educators cannot sit idly by and wait for voice-activated computers to take the place of keyboarding as an input device for the computer age. The time is *now* in the computer age for keyboarding to take its rightful place in the elementary school curriculum. It is mandatory that business educators deliver the keyboarding instruction or at least offer

inservice training for elementary school teachers. In New York State, for example, both business and elementary educators have been certified to teach keyboarding in the elementary school. The student who progresses from elementary school to secondary and higher education must receive proper keyboarding instruction from its initial stages to periodic reinforcement. Finally, for the future office worker, advanced keyboarding and formatting applications must be taught, building upon the initial instruction first offered in the elementary school. With or without elaborate facilities, administrative cooperation is of extreme importance. Everything will work out with an enthusiastic business teacher who is willing to change old methodology and adapt instruction to provide these vital new services to the younger children. Keyboarding at the elementary school is not "business as usual," but business with adaptability to students who before now have not been within the province of the secondary business educator.

CHAPTER 5

Integrating Technological Changes into The Middle/Secondary Curriculum

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For decades, little changed in business education classrooms at either the middle or secondary school level. Because office procedures in business changed little, teachers and educators were not forced to look critically at curriculum revision. The subjects taught met the demands of business. The sudden race of technology, however, has forced a reevaluation of the curriculum, and broad and specific changes need to be made to prepare students to handle complex hardware, software, high-tech procedures, and terminology. Technological changes—advances in communications, computing, robotics, and optics—have affected every phase of business as well as the way we work, think, and live. The computer, a tool used to solve problems, has had the greatest effect on business. The time has come to integrate technological changes into the curriculum at both the middle and secondary levels.

With technology advancing so rapidly, it is difficult to predict what middle and secondary students will encounter when they face the marketplace, especially if they go on to two to four years of postsecondary education. Any exposure to technology, however, is better than no exposure. Students do quite well, as a general rule, in relating learned knowledge to marketplace expectations. Too, learning to master most computer hardware and software is somewhat like a stacked learning experience; little by little students master all the ramifications involved in even the simplest hardware configuration, disk operating system, or application program. Once a configuration, system, or program is under control, however, learning another becomes much easier due to the transfer of concepts previously learned.

While these middle and secondary students will face technological changes not yet conceived, some sure changes are in progress which will affect both education and the businesses they will enter. In structuring new courses for the business education classroom, the following changes should be kept in mind: Books and encyclopedias are already being placed on compact disc records, which will allow text or pictures to be displayed at prices that outweigh the printed page. Advances are also being made in low-cost electronic publishing. Multi-dimensional, layered database structures will provide reference materials and large bases of information in improved electronic form. Microcomputers are already interactive with mainframe computers, and better user interfaces will cause this trend to continue at a faster pace. This will speed electronic mail, messaging, and work at home

and increase the number of microcomputers on organization desks. Such advances as IBM's Token Ring network and Compaq's Telecompaq will speed growth in telecommunications, perhaps making this one of the largest growth areas. The 80386 microprocessor will increase microcomputer speed, memory, and storage, which will generate multitasking capabilities far advanced over those in use today, and powerful processing will dominate office computing. Electronic home banking and other home applications will expand, thereby increasing the number of microcomputers in homes. High resolution graphics will spur the use of computer-aided design (CAD) and computer-aided imagery (CAI), which will be used for a multitude of creative tasks in business and industry. Graphics will be used as a presentation tool in schools and in businesses. Microcomputer industry standards will stabilize the personal computer market, making it more dependable from the user's point of view, and there will be a microcomputer on practically every organization desk, networked to a mainframe or other microcomputer.

In preparing students for this kind of technological environment, middle and secondary teachers face a number of challenges: (1) how to keep themselves trained in the technological changes, (2) how to obtain equipment and materials for use in preparing students for these changes, and (3) how to integrate these technological changes into the curriculum. Fortunately, many school systems are beginning to realize the importance of technological changes in society and are providing teacher training in technological concepts and in hardware and software areas. In addition, school systems are beginning to provide microcomputers and software for classroom use. Businesses are providing additional hardware and software to school systems and offering aid in teacher training. Large school systems, in an effort to improve communications and to reduce the paper flow, are making plans to network individual schools with each other and with system mainframes. As these plans progress, business education teachers will become involved in these efforts, thereby learning the concepts of networks and interactive computers. While these actions help to solve the first two challenges, how to integrate these changes into the curriculum is generally left to the expertise of the teachers. Due to the business education teachers' backgrounds in office and management operations and to their ability to relate the subject matter to the world of work, qualified business education teachers should be responsible for teaching new courses concerned with technological changes and for integrating these changes into the existing curriculum.

INTEGRATING TECHNOLOGICAL CHANGES AT THE MIDDLE SCHOOL LEVEL

At the middle school level, students should be exposed to four broad areas of microcomputer technology if they are to be prepared to move to higher level courses at the secondary level: (1) keyboarding, (2) computer awareness, (3) introduction to computers, and (4) disk operating system (DOS). Specific areas to integrate within the four broad areas are computer and computer-related terminology, computer-aided instruction, and software programs.

Keyboarding. The keyboard is the most widely used microcomputer input device. Despite technological advances toward the perfection of other input devices, businesses have invested too much capital in keyboards and keyboard-compatible equipment to do a changeover quickly; therefore, keyboarding is a top priority for an efficient computer user.

If students have not already had keyboarding experience at the elementary level, they should have a standard class which meets daily for at least a nine-week period. Preferably, the class will be conducted with the use of microcomputers, but typewriters will work if computers are unavailable. If typewriters are used, calculators (if available) may be used to provide keypad practice. Integrated into this class could be any number of computer and computer-related terms. If microcomputers are available for use, teachers should consider the use of computer-aided instruction such as typing tutors or other keyboarding software.

Computer awareness. While many students enter middle school with some computer exposure from home or society, their knowledge is usually fragmented; rarely do they have a cohesive picture of computers and their uses. A nine-week course in computer awareness will fill the gaps for the students who have been exposed to computers and bring those who have had no exposure up to the awareness level.

This nine-week course should be designed to provide an orderly picture of computers and how they fit into schools, society, and industry. Major content areas include a brief history of the computer industry; impact of computers on individuals and businesses; social issues involved with computers; a survey of existing computers, peripherals, and computer systems; the functions and features of computers, data, storage, and memory; computer and computer-related terminology; introduction to simple programming; and introduction to simple, user-friendly software, including graphics. Microcomputers are suggested for this course not only for the computer exposure but as a means to continue keyboarding experience. If microcomputers are not available, the use of filmstrips, transparencies, magazines, or newspaper articles may be substituted.

Introduction to computers. Many state departments of education have prepared curriculum guides for this semester course, which may also be offered at the secondary level. In general, the course is designed to introduce the basic concepts of information processing and to develop computer literacy. Major content areas include a survey of computer language and equipment, technological terminology, input/output media, computer careers, the uses and effects of computers in areas other than business, the disk operating system (DOS), and an introduction to software, including some simple utility programs. Microcomputers are recommended for use in this course.

This course is often used as a prerequisite for computer programming classes, especially at the secondary level, and the content has leaned heavily toward an introduction to programming languages. It is suggested, however, that at the middle school level, this emphasis be shifted somewhat to learning the disk operating system and integrating easy-to-use software if micro-

computers are available. An introduction to computer programming languages is definitely in order, but a semester course allows time for integration of other aspects.

Disk operating system (DOS). For students to be efficient users of microcomputers, an understanding of the disk operating system of a microcomputer is essential. DOS, the most important software program any computer user will encounter, does not warrant a formal class, but attention should be given this critical area in a specified class at the middle school level. Ideally, it should be integrated into the introduction to computers class. If this class is not offered at the middle school level, then it should be included in the computer awareness class.

MIDDLE SCHOOL CURRICULUM SUMMARY

It is recommended that efforts be made to include three courses in the middle school curriculum—keyboarding, computer awareness, and introduction to computers. This would provide a year of needed training at this level—one semester of keyboarding and computer awareness and one semester of introduction to computers. However, if this is not feasible due to scheduling problems, as many technological elements as possible should be integrated into existing courses. For example, if the middle school curriculum is limited to one semester of keyboarding, it would be possible with some ingenuity on the part of the teacher to integrate computer terminology, computer awareness, and limited concepts into the course. The curriculum should be broadened beyond a single keyboarding course, and it is essential that business teachers and educators go the distance needed toward integrating technological change at this level.

INTEGRATING TECHNOLOGICAL CHANGES AT THE SECONDARY LEVEL

The advances in microcomputer and software technology are changing an increasing number of office functions. As the secondary students move out into jobs, this technology enables them to obtain superlative problem-solving tools and to do their jobs better and more quickly provided they have had some exposure and training. These changes should be reflected in every business education class at the secondary level, and the curriculum should be expanded to include additional courses such as microcomputer applications and word processing.

Integrating Technological Changes into Existing Courses

These suggestions are offered as considerations for integrating technological changes into existing courses. Many of the suggestions require computer hardware and software. If hardware and software are not available, it is recommended that teachers introduce the concepts instead.

Accounting. In businesses, all aspects of accounting have been computerized with the use of spreadsheet and database management programs

or customized software. If sufficient computers are available, the accounting class should be reclassified as computerized accounting, which is a trend in some states. The states involved in computerized accounting have prepared curriculum guides for this course. Even though computers may not be available for use with accounting classes, the computerized concepts should be pointed out as the class progresses through the course. If limited computers or computer time is available, students should be provided software experience in one or more of these areas:

1. Vendor programs customized for use with accounting textbooks
2. Tutorial accounting programs
3. Tax preparation and planning programs
4. Payroll programs
5. Inventory control programs
6. Finance programs for tracking income, expense, and other transactions
7. Accounting programs with modular packages for updating accounts, making customer lists, and tracking cash receipts and payments
8. Spreadsheet programs
9. Database management programs
10. Chart and graph programs.

Businesses use pictorial representations in the form of carefully constructed charts, graphs, and pictures as much as possible to add impact to reports, analyses, projections, and other presentation materials. Almost all accounting applications lend themselves to graphing—expense or income reports, departmental overhead expenses, regional or area sales, or a variety of projections. Accounting is an excellent class for integrating graphics. This will add a dimension that students will profit from and enjoy; it will be an exceptional learning experience in preparing for a business office.

Basic business and economics. An array of microcomputer materials is available on the market which lends itself to integration into the basic business and economics area. Among those materials available are computer-assisted and computer-managed instructional materials, business simulations, tutorial programs, and business/home programs such as personal budgets or money management, tax records, word lists, and personal decisions. These programs provide interesting, effective ways for students in these classes to learn as they are being exposed to technological changes.

The range of basic business and economics programs available extends from the lower cognitive level to the higher, providing teachers an opportunity to individualize training. Programs are also available which provide teachers a quick and easy way to create courseware; some of these programs allow for both text and graphics on a single page.

Having access to microcomputers is a problem in some schools; however, one or two in a classroom will add interest and convey quite well many of the concepts of change. Demonstrations by the teacher or individual students add to the learning experience. If only one computer is available, teachers may consider connecting the computer to a large screen.

If microcomputers are not available, information about technological changes in society should be integrated into the basic business and economics classes through classroom discussions, filmstrips, and articles from current newspapers and magazines. Students should be aware of societal changes caused by growth in the high-tech field and how the changes will affect them and their jobs when they reach the marketplace.

Communications. A momentous communications revolution is in progress; more technological advances are being made in this area at present than in any other area. The communications course should be updated to reflect the state of communications today. Students in these classes should be made aware of the changes occurring in electronic mail; electronic publishing; telecommunications; interactive television; electronic encyclopedias, thesauruses, outliners, spelling checkers, and English syntax style analyzers; networking; speech recognition systems, cordless, high-tech, and cellular telephones; high speed facsimile; teleconferencing; and microwave linked offices. Teachers of business communications should revise and revamp the curriculum to integrate all of the areas listed above. This integration does not require the use of microcomputers, although they will be helpful. Integration may be accomplished through class discussions, current and futuristic research papers, magazine and newspaper articles, filmstrips, transparencies, and reports from students with home computers connected to modems.

If microcomputers are available, communications students should be required to use simple, easy-to-learn word processors and editors to complete assignments. These software programs should be used in conjunction with built-in or stand-alone spelling checkers and English syntax style analyzers. In schools that are connected to large mainframe computers, teachers should make an offer to expose students to on-line communications and on-line editors.

The paperless office has been rumored for several years, but it is very close to reality with the advent of the coupling of microcomputers with mainframe computers. At the end of this chapter is a comparison between manual mail handling and on-line mail handling in a large organization. Communications teachers may wish to use the comparison as the basis for a class discussion.

Computer programming. With the advent of more complex and more comprehensive disk operating systems, computer programming teachers should update their courses to include a thorough analysis of the disk operating systems and how to use computer programs in conjunction with DOS to make computer users more efficient. In addition to the DOS commands, students should be taught to debug programs and to use line and regular editors, configuration commands, and link programs. They should learn to organize a tree-structured directory on a fixed disk, run compilers and assemblers on a fixed disk, and write batch files to set up menus for the fixed disk and to reconfigure any computer keyboard. In the higher levels of computer programming, students should be introduced to DOS technical reference manuals and their uses.

Keyboarding/typewriting. Teachers of keyboarding and typewriting at the secondary level should phase out typewriters and replace them with microcomputers, which are no longer cost prohibitive for the classroom. Students need experience on microcomputers, and this will make classrooms more versatile; they may be used for other computer and computer-related classes when not in use for keyboarding/typewriting classes. Once microcomputers are phased into the keyboarding/typewriting classrooms, teachers should immediately make a transition in teaching materials—from textbooks only to a combination of textbooks, typing tutors, and word processors.

The Typewriting II class should be converted into a class in word processing where microcomputers are essential. Detailed suggestions for this class may be found under "word processing" in this chapter.

Marketing and business management. The basic purpose of any business enterprise is to make a profit, and marketing and business management strategies often determine whether or not that profit is made. Until the appearance of microcomputers, marketing and business management teachers were limited to teaching little more than concepts and theory. It was difficult to provide students with modernized marketing strategies and practical business management experience. It was also difficult for students to relate these theoretical processes to the real environment they encountered once they entered a business office. With microcomputers in the classroom, however, teachers can expose students to various up-to-date marketing strategies and business management experiences by using hands-on simulations. These simulations provide the students with experiences in making sales projections, determining costs and markups, making forecasts, reaching investment decisions, and developing decision-making skills—the kinds of experiences they encounter once they reach the marketplace. Since the simulations generally use a spreadsheet foundation, students are exposed to the spreadsheet concept as they learn—an added and useful dividend. Other areas to add to the marketing and business management class are an introduction to industrial automation, global trade, and stock market simulations.

In addition to lending itself to a variety of simulations, marketing and business management is an excellent class in which to integrate graphics. With the use of chart, graph, and presentation graphics programs, students can graph profit and loss statements, sales figures and statistics, sales projections, investment decisions, and play "what if" in managing a business. Using presentation graphics programs will provide experiences in preparing sales and marketing presentations and displays. As an adjunct to the presentations, students may design advertising brochures or flyers with the graphics programs.

Microcomputers for each student or an extended time period in the school computer lab is recommended for this class. If neither of these situations exist, one or several computers in the classroom will help to get across the concepts of the high-tech marketing strategies and business management techniques used in businesses. Teacher demonstrations on a single computer, integrated

into a well-designed, modernized course, will go far toward preparing the students to help make the profit that every business wants.

Office procedures. The office procedures course lends itself to numerous software applications, and the teacher of this class has a range from which to select. If possible, microcomputers should be purchased for this class in order to integrate the changing applications and procedures. Listed below are some applications that are computerized in business: payroll procedures, accounts payable and accounts receivable, tax preparation and planning, filing/sorting, money management, mail handling, inventory control, document processing, and calendaring. Not only should students be aware of computerized applications, but they should be exposed to the concepts involved in on-line electronic address lists, electronic mail and mailsort, on-line communications, and the variety of ways to handle documents and information—database management structures, spreadsheets, word processors, label markers, and utility programs.

Integrating New Technology-Based Courses

New courses with a technological base should be started at the secondary level. These include word processing and microcomputer applications, courses that require constant use of microcomputers. A variety of software packages will also be needed.

Microcomputer applications. What is being used in business offices today to perform a variety of office functions? The answer is microcomputers and software, of course. If your business education department has not considered adding microcomputer applications to its curriculum, you should start making plans to integrate this course into the secondary curriculum immediately. The course requires microcomputers and a number of software programs. If possible, one or more fixed disk computers should be available for use in this course.

Microcomputer applications is designed to teach students how to use the computer as a personal and business tool through the use of system, application, and utility software. Application software should include database management, spreadsheet, graphic, word processing, and telecommunications areas; integrated and simulated software may also be included. System software should consist of the disk operating system and diagnostics. Utility programs should include a variety of programs such as printer control codes and spoolers, keyboard macros, fixed disk organizers, time and data programs, spreadsheet templates, device drivers, and sideways printing.

The outline which follows may be helpful in making plans to integrate this course into the secondary curriculum. In addition to the areas included in the outline, students should be taught how to evaluate hardware and software. An examination of jobs and job requirements in the hardware/software fields should become a part of the course content as well as an examination of the future implications for computer hardware and software and how those implications will affect the job market.

MICROCOMPUTER APPLICATIONS OUTLINE

INTRODUCTION TO HARDWARE

I. Hardware/Hardware Components
   A. Hardware installation
      1. Functions of major system components
      2. Connection of components to respective adapter cards
      3. Functions of peripherals
      4. Connection of peripherals to system unit
   B. Optional hardware installation
      1. System board switches
      2. Memory option switches
   C. Fixed disk movement (short and long distances)
II. Hardware Diagnostics

SYSTEM AND UTILITY SOFTWARE

I. Disk Operating System Software
   A. Functions and features of diskettes
   B. Functions and features of system software
   C. Hardware compatibility
   D. DOS system files
   E. DOS commands
   F. DOS filter commands
   G. DOS error messages
   H. DOS editor and editing keys
   I. Batch files
   J. Reconfiguring devices and keyboard keys
II. Utility Software
   A. Printer control codes
   B. Print Spoolers
   C. Fixed disk organizers
   D. Keyboard macros
   E. Date and time programs
   F. Device drivers
   G. RAM disks

INTRODUCTION TO SPREADSHEET SOFTWARE

I. Orientation to Spreadsheets
   A. Software structure and characteristics
   B. Hardware requirements and compatibility
   C. Command structure
   D. Spreadsheet terminology
II. Building a Spreadsheet
   A. Data, values, labels
   B. Mathematical and statistical functions
   C. Editing
   D. Commands
III. Advanced Functions and Commands
   A. Logical operators
   B. Data tables

C. Recalculation options
D. Template creation
E. Macros

IV. Documentation and Printing
A. Documentation procedures
B. Printing procedures
1. Printing of formulas
2. Printing of cell contents
3. Printing of entire spreadsheet
4. Printing of selected portions of spreadsheet
5. Selecting printer codes
6. Using utility program to print sideways

INTRODUCTION TO DATABASE MANAGEMENT SOFTWARE

I. Orientation to Database Management Programs
A. Software structure and characteristics
B. Hardware requirements and compatibility
C. Menu and submenu structure
D. Search features and criteria
E. Database management software terminology

II. Database Form Design
A. Designing a database form
B. Adding data to forms
C. Searching for and retrieving selected records
D. Updating records
E. Removing single records and groups of records
F. Redesigning a database form

III. Sorting and Printing
A. Using search feature to print selected records
B. Using sort feature to print records in new sequence
C. Using print specifications to print selected items from form
D. Printing records' items and data
E. Printing data only
F. Designing and printing a report from records

INTRODUCTION TO COMMUNICATIONS HARDWARE AND SOFTWARE

I. Orientation to Communications
A. Local and long-distance communications
B. Communications hardware
1. Interfaces
2. Modems
C. Communications software

II. Electronic Message Systems
A. Sending and receiving electronic mail
B. Satellites and videotex
C. Microwave linked offices

III. Networks and Networking
A. Interactive computers
B. Local and remote networks
C. Logging on to a remote bulletin board or database structure

D. File transfer between computers
   1. Uploading
   2. Downloading

IV. Voice Communications
   A. Teleconferencing
   B. Cellular and cordless telephones

INTRODUCTION TO GRAPHICS

I. Orientation to Graphics
   A. Drawing modules
   B. Graphics screens
   C. Graphics images
   D. Graphics commands
   E. Color selection

II. Graphics Software
   A. Structure and characteristics
   B. Functions and features
   C. Hardware requirements and compatibility
   D. Graphics terminology

III. Graphing Relationships
   A. Bar, line, and stacked graphs
   B. Pie charts
   C. Area charts
   D. Graphs from database or spreadsheet files

IV. Drawing

V. Graphing Text
   A. Text selection
   B. Text size
   C. Integrating text and pictures

VI. Presentation Graphics
   A. Designing a presentation
   B. Graphing a presentation
   C. Creating a finished presentation

INTRODUCTION TO WORD PROCESSING

I. Orientation to Word Processing
   A. Structure and characteristics
   B. Functions and features
   C. Hardware requirements and compatibility
   D. Software terminology

II. Documents
   A. Formatting
   B. Creating
   C. Editing
   D. Checking spelling
   E. Printing

III. Advanced Features
   A. Blocking
   B. Copying, moving, and deleting

C. Searching and replacing
D. Embedding print commands

INTRODUCTION TO INTEGRATED SOFTWARE

I. Integrated Programs
II. Integrating Separate Programs

Word processing. Word processing, a component of information processing, should be a part of the curriculum at the secondary level. If your school has not done so, the Typewriting II class should be reclassified as word processing, and microcomputers should be placed in the room for use by students in this class. While students gain additional keyboarding skills, they also learn the concepts involved in word processing and how to use word processing software effectively. The class should be language arts based in order to strengthen the communication skills of the students.

This course should be designed to introduce work flow processes, to convey procedural word processing and information processing concepts, and to teach word processing software on the microcomputer. To provide a heavy focus on reinforcement of communications skills, word processing accessories such as outliners, spelling checkers, memory-resident thesauruses, writing-style analyzers, and electronic glossaries should be included. Editors and integrated software are other software products to which students should be exposed. If possible, students should experience using on-line editors. Opportunity should be provided for students to obtain interpersonal relationship and decision-making skills. The classroom setting should simulate the word processing office setting.

It is recommended that students in the secondary word processing class be started on easy-to-learn, user-friendly software programs. Progressively, they should move up to more powerful programs they will encounter when they enter business.

SECONDARY SCHOOL CURRICULUM SUMMARY

Technological changes have affected every facet of business and our personal lives. Therefore, it is recommended that efforts be made to integrate a number of technological changes into existing courses at the secondary level. Many of the changes in business were brought about by microcomputers. As a result, most of the suggested changes involve the acquisition of microcomputers and software, tools used in business to help employees perform better and quicker those office functions for which they are responsible.

In addition to integrating technological changes into existing courses, secondary teachers should start new technology-based courses such as word processing and computer applications in order to train business students to be proficient in microcomputer and software technology. This will better prepare them to handle jobs which they will encounter and are already encountering in the work environment.

CHAPTER 6

Integrating Technological Changes into The Two-Year College Curriculum

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THE YEAR: 1996
THE PLACE: An integrated workstation in a modern office

Sally and Jim, administrative assistants, arrive at their shared integrated workstations in the executive suite of a multinational manufacturing firm. Sally immediately speaks her code into the supermicrocomputer. Voice recognition acknowledges Sally, and she asks if there are any special instructions for the day.

Meanwhile, Jim is scanning the long distance electronic messages that have arrived during the weekend. There are several—some urgent, some routine. He dispatches the messages with priority ratings to appropriate individuals through the company's networking system.

By means of a videotechnology delivery system, Sally watches her employer appear on the screen in color and describe the details of the special project for that day. Acutally, the instructions were placed much earlier from Japan where her employer, Dan, is attending an international meeting. Dan requests additional graphic support for his sales presentation.

Sally and Jim begin searching through the company's vast micrographic storage system to select the most effective support material. The request is urgent and vital to the company's success at the conference; therefore, several possible solutions are transmitted to the president's viewing screen for approval. The president is still at his home, but this causes no delays. His home screen communicates his selection, and by laser transmission the material is then directed to Dan's terminal in Japan. The entire process takes 12 minutes.

Now Sally and Jim begin work on an analysis of their job description, which Dan has requested they update as evaluation time is nearing. For the past month they have requested the supermicrocomputer to log and summarize their output. The combined results are: 28 percent of their time spent on financial applications; 21 percent on electronic spreadsheets; 20 percent on graphics; 10 percent on telecommunications; and 21 percent on information communications.

THE PAST TO THE PRESENT

"Today is the tommorrow you dreamed about yesterday." That popular saying aptly reflects the vast technological changes in the office of the eighties

and even more so in the nineties. Office revolutions have occurred in the past—the entry of the typewriting machines, the advent of the copy machines—but none is quite so dramatic as the office entry into high technology. Almost overnight the equipment outmatched the trained operators, and old educational methods were no longer relevant. In many cases "old" meant last month's innovations.

Business. One day business was operating as usual; the next day, or so it seemed, there was a struggle to control the avalanche of new and exciting equipment that was rapidly revolutionizing the way information was processed. With such rapid change, problems were inevitable and even expected. People's thinking about procedures had to be changed, and training in keyboarding became an essential skill for all levels of office employees.

The office of the future was often described as a place where everything would become easier. One reality that stunned business was that the new technologies increased the flow of paper rather than reaching the promised land of the "paperless" office. The problem was that real office automation required more changes than just the technologies used for storing and retrieving information. A thorough restructuring was necessary for business to get the most out of the process.

Companies bought equipment in a mad race to get on the bandwagon of the new technology. The explosion of the different types of equipment led to the proliferation of incompatible systems and a great deal of user frustration. Some companies and some people resisted the new technologies, preferring familiar methods. Those companies and people quickly discovered that to survive the competition, the new technology had to be mastered.

The modern office could be called a jungle of incompatibility after an entire decade of attempts to capitalize on the promises of the office of the future. The result of this action has been costly investments in telecommunications and data and word processing systems, most of which don't speak to each other.

The real office of the future is slowly emerging as vendors are realizing that the future success of the entire system depends on hardware and software development that can accommodate integrated systems. Machines must interface with machines, and people must interface with both the concept and the machines.

Business education. The new technology confounded and frustrated business; but driven by competition, business found solutions—often by trial and error. Business education was thrown into a turmoil for several significant reasons:

1. The reluctance/resistance to change
2. Severe budget constraints
3. Curriculum confusion
4. Wariness of obsolescence

The resistance to change that also affected business was fairly easy to overcome. With the media attention the new technology received, public and private postsecondary institutions recognized that, like it or not, everyone

had to learn the new jargon and the new equipment. Intensive workshops and seminars to update faculties and staffs were conducted across the country. Very quickly business educators responded confidently with the concepts, but exhibited great insecurity in actually handling equipment. Nevertheless, the first step in the new educational programs was established.

Although every educator planned workshops in an effort to catch up with the program, far too little equipment was available for actual use. Budget constraints slowed many districts in their attempt to make the needed purchases and placed other districts in a wait and see posture from which many have yet to recover.

In too many areas business education was underfinanced and suffered from public criticism of being "out of step" with the times. By the time a district had allocated funds for equipment, new technology had been developed and new equipment was needed. The dog chasing its tail syndrome prevailed. The more educators learned about the new technologies, the more unanswered questions developed—questions that no one was answering in the workshops nor in the vendor displays:

1. Should the new technology be taught as a concept or by hands-on training?
2. If the hands-on approach was best, what kind of equipment was really needed?
3. Where was the budget for this expensive conversion?
4. Would the equipment purchased today be worthless tomorrow?

Unfortunately, the early pioneers, the first educators to race toward the technology with the budget funds to get the equipment, faced great disappointment as the equipment of today was deemed almost useless the next day. This frustration with the rapid rate of change only increased the difficulties education faced in catching up.

Those concerned with curriculum improvement began to wonder: (1) Should institutions throw out the old business education curriculum standbys because the subject had lost its relevance to the business world today? (2) Were some institutions guilty of putting Band-Aids on old curriculum, buying new equipment, and passing the entire procedure off as new curriculum? The resolution of these questions was a major part of the challenge facing business education.

A primary problem in business education was the reaction from business as to what should be taught. Postsecondary training had always prided itself on staying close to the marketplace, the employers who hired the graduates. Now the direction from business was mixed and unfocused. Employers began saying that better skills in logic, decision making, communication, and math were the key ingredients to successful employees.

One decade into the new technologies, business education finds itself at the crossroads. It had learned to teach the needed compentencies; it has learned to keep up with the hardware and software innovations; now it must incorporate the new technology into every phase of the curriculum if business education is to remain viable.

Today's students. Initially those already in the work force when the new technology arrived were filled with fears. Those fears ranged from fear that

the new equipment could not be learned to fear of replacement by machine. The first concern of learning the new equipment was well-founded since user-friendly programs took a while to develop. But with vendor assistance, patience, and time, that fear was soon eliminated.

Technical and junior colleges soon saw an influx of more advanced, experienced students entering the classroom determined to master the new competencies. Business educators developed individual programs to aid the older students in learning the new technologies. The fear of replacement by machines proved to be unfounded as business discovered new, faster ways of communicating, and business expanded its information flow thus creating more, not fewer, jobs.

The younger students, however, arrived on the postsecondary scene with no fears or concerns about the new technology. By the time these students reached technical or junior college level their lives had been infiltrated with technology. Video games had already taught them that machines were fun and easy to operate, and they had established a basic response skill. Even "average" or "poor" students could quickly acquire these skills.

These skills would later pave the way to a comfort level with the new technology that gave these students a definite edge. These were skills that neither business in its frantic quest for a workable solution nor education in its quest for a reasonable training solution within the confines of existing budgets had achieved.

Today's generation of postsecondary students is indeed different from those in the past. While many business educators dreamed about Buck Rogers, the students of today have watched their version of Buck Rogers actually land on the moon. Today's students feel about the computer terminal the way most business educators felt about the correcting electric typewriter—a real friend for all times.

THE CHALLENGE

Every campus across the country boasts that it is teaching the latest technologies, but the question is "How?" Too frequently the new technology is being taught in isolated courses rather than being mainstreamed into the entire curriculum. To integrate technology into all programs requires the same type of restructuring that was needed in business. In education, integration requires new teacher preparations, new attitudes, new syllabuses, and new curriculums. Today's technology is more than a concept; it is the application and demonstration of the concept. See pages 69-72 for suggested ways to integrate technology into a postsecondary secretarial office procedures course.

The computerization of the office must be viewed from a number of perspectives and so must the educational process. The job functions vary by level, degree, support requirements, and other factors. At least four classifications of potential office systems users must be trained: executive management, middle management, professional and technical personnel, and secretarial and support personnel. Each of these classifications offers special challenges to business education.

The business education program must include emphasis on the person-machine interface. The success of the entire automation effort depends on how well users embrace new technologies and procedures. The interface between them and the system is crucial. Voice-data integration will be the standard in the near future. The curriculum of the future and of today must incorporate the current technologies and be ever alert to the innovations of the future. The revolution in the office has just begun.

RELEVANT PROGRAM

Advisory committees. An effective curriculum demands input from sources other than publishers and educators. Feedback from employers and former students is important. Therefore, the selection of an advisory committee is critical to the mission. The mission should be to involve a group of people dedicated to contributing to the viability of business education programs. These members need to represent the best possible community mix. Employers from large and small businesses, secondary business educators, former students of the programs, current students, state and local politicians, and decision makers of the institution should all be included as members of the advisory committee. At least two of the members should be individuals within the district system who are influential in budget decisions.

Prior to appointing the advisory committee, the business educator should interview each potential candidate to be sure the person recommended has the time needed. If time is taken in the selection process, the advisory committee can be a dynamic force in support of business education. The activities of the advisory committee may include: (1) allowing students to come into their firms to survey equipment and technology used, (2) providing plans whereby students can observe technology in operation by actually shadowing advisory committee members at the office, (3) organizing a legislative subcommittee to influence state and local decisions on budget appropriation, (4) participating in the recruitment of students for the institution's programs, (5) providing teacher training for all new technology located within the advisory committee member's office, and (6) making a commitment to improve the programs by innovative program development at regular brainstorming/action-planning sessions.

Business visitors. Business educators today are only as good as their linkages are to business. The facts are obvious. No educational institution has the budget capacity to provide the latest technology for every program. Thus, the ability of the educator to utilize the assets of business is vital to the credibility of the technical or junior college program.

A program of visits to local businesses must be ongoing and must have purpose. One approach is to complete a survey form during the visit to be shared with students and other faculty members. Another approach is to also videotape the facilities so that students are exposed in the least disruptive manner to the real technologies that exist in the community. If videotaping is not convenient, at least take pictures and take along a student or two. If the business visit also incorporates a follow-up of a former student, another

survey form should be used to measure the effectiveness of the program.

Tracking former students. It is essential that business educators devise systems for evaluating curriculum utilizing feedback from the users of the programs. Former students are useful in bringing the real world of work into the classroom. They should be monitored for progress toward career goals as well as their immediate use of the competencies acquired at the technical or junior college. One measure of the success of a program is its development of problem-solving skills needed for the new technology. It is important to know if students in the programs have moved up within their companies, acquired additional training, or are limited in their career potential by the skills received at the institution.

The following is the type of survey that can be used in gaining information from former students:

(SCHOOL NAME)
(SCHOOL ADDRESS)

ANNUAL QUESTIONNAIRE

Please assist us by filling in the questionnaire and returning it as soon as possible. Signing the questionnaire is optional. Thanks!

Program taken at (school name) _____

No. of years out of school _____ No. of years in current position _____

Title of current position _____ Previous titles _____

Skills used in current job:		Skills used in previous positions:	
Shorthand or notetaking	_____	Shorthand or notetaking	_____
Accounting	_____	Accounting	_____
Machine Transcription	_____	Machine Transcription	_____
Filing	_____	Filing	_____
Office Machines	_____	Office Machines	_____
Word Processor (Brand)	_____	Word Processor (Brand)	_____
Computer (Brand)	_____	Computer (Brand)	_____
Software _____		Software _____	
_____			
Other _____		Other _____	

Computers/Word Processors used in your company by other employees by brand names _____

_____

Rate skills learned at (school name) as most valuable 10, least valuable 0; put NA if subject not taken at (school name).

Shorthand or Notetaking	_____	Machine Transcription	_____
Word Processing	_____	Office Machines	_____
Computer	_____	Filing	_____
Accounting	_____	Other	_____

Skills taught as (school name) but need to be expanded _____

_____

Skills not taught but were needed immediately on the job _____

_____

Training I have received on the job _____

_____

If you have received a promotion, list primary reason cited for promotion by your employer _____

_____

Seminars and workshops I have attended since leaving school _____

_____

Educational courses I have taken since leaving school _____

_____

_____
(signing is optional)

Networking. For programs to remain relevant, a networking arrangement with business is vital. The business educator should develop a list of cooperative employers who would allow students to shadow employees, to learn their equipment, to participate in co-op programs with part-time jobs, and any other means that can be devised so that the students are moved out of the classrooms and into the changing business world as often as feasible.

Time in the field. Business educators must place themselves into the world of business on a regular basis. It is not enough to read, study, and attend workshops. Teachers must also obtain hands-on experience with equipment. Businesses, vendors, and sometimes the administrative offices of the technical or junior college can provide the opportunities needed for refining the skills used today.

MEETING THE CHALLENGE

Those business educators who meet the technological changes will be the ones who integrate them into every facet of teaching. They will believe that "today is the tomorrow we dreamed about yesterday," and they will be ready for that tomorrow.

APPENDIX

The following are suggested activities designed to integrate technology into a postsecondary secretarial/office procedures course.

The Role of the Secretary

As a group project have the students gather job descriptions of various levels of secretaries and administrative assistants in the community. The emphasis should be on learning what technological skills are required and how these have changed in the last five years. The report should include the types of equipment used, the frequency of usage, and the extent of in-house training provided by the firms. Report findngs should be made available to the entire class.

Another group project could be to study an information processing center and at least one traditional secretarial position. The differences in skills, knowledge, and opportunities for advancement should be included in the report. To be effective this report must be shared. If time permits, a panel discussion with two information processing secretaries and two traditional secretaries should be arranged so that the students can learn firsthand the advantages of each and how important technology is to both groups.

The Office Environment

Have students, as a group or individually, visit at least two offices that utilize the open plan design and report on the advantages and disadvantages of each. If possible, a video camera should be used during the visit to record the open plan design in detail.

Another group or individual project could be the actual planning and designing of an office. The student or students should be given the number of people in the office, the type of office, and the floor footage. The project would be to visit office furniture showrooms and plan one open design office and one traditional office. A detailed budget comparing the costs of each should be submitted with the design.

Public Relations Duties

Students should see at least one demonstration of electronic calendars and how appointments are recorded. If the school does not have the software needed, the instructor should check with members of the advisory committee to see if outside facilities are available. Product centers for software may also be available in the community to demonstrate this.

Secretarial Typing and Supplies

As an individual or group project, students could comparison shop the equipment and supplies on the market. The purpose would be to give them a realistic view of prices and availability of a variety of items needed for the electronic office.

Data and Word Processing

The class should visit a computer store or a product center to see the latest state-of-the-art computers and word processors. In addition a speaker should be brought into the classroom who is an expert on the future generations of data equipment.

Reprographics

Vendors could be invited for a panel discussion on the latest equipment. If the vendors did not have videos to show, then it would be necessary for the students to see this equipment in action. A visit to an electronic print shop could be taken by a group of students with a video camera or the entire class so that the students can learn what is available, the costs, and the quality of various processes.

Mail Responsibilities

Students should see electronic mail in operation. This could be done either by a visit to a member of the advisory committee's office or by bringing the software into the classroom and complete a project on it. Vendors should be available to assist in demonstrating this operation.

Dictation

Have students gather information from vendors on various travel dictation units with a cost and function comparison. Another project could be to have an open house for the advisory committee with vendors demonstrating their products. The students would be in charge of making all the arrangements and demonstrating the products for the vendors.

Transcription

Have the students report on the various software programs that are available to aid in transcription such as spelling dictionaries and reference data. Students should experience correcting from rough drafts with word processing equipment and become comfortable with format changes.

Composing Assignments

Give students an office situation and have them compose boilerplate letters for the word processing center. Along with the letters, the students should indicate the format instructions for the center.

Postal and Shipping Services

A representative from the Postal Service should speak to the class on the latest requirements for mailing with emphasis on the equipment utilized by the Postal Service to speed the mail. A discussion of Electronic Computer Originated Mail (E-COM Service) should be included. A class presentation by private telecommunications carriers should also be arranged. Students could be assigned a project that would compare various shipping services in both time and cost. The students should include in the report the types of equipment used by each shipping service.

A vendor such as Pitney Bowes should be invited to discuss with the class the latest mechanized mail room equipment; and if possible, a view to the future of mail and parcel delivery should be presented.

Basic Telephone and Telegraph Services

Have three telecommunications firms present a panel discussion on the current state of equipment and the future equipment for the electronic office. The students should survey and report on the costs of at least four long-distance services. Included with the costs should be advantages and disadvantages of each service.

Extended Telephone, Telegraph, and Other Communication Services

Have a student to present to the class a report on the various telecommunication services that are available in the local community.

A demonstration of voice mail should be given to the students either on film or live. A representative of Western Union could be invited to discuss the services available and how technology has changed the delivery of messages. The students should also see a demonstration of an integrated office with intelligent copiers completing the telecommunications process.

Records Control

The students could study the various storage systems available today and report on their cost, capability, and convenience. The students should also see on film or in a demonstration computer-assisted retrieval systems.

Alphabetic Indexing

A visit could be made to a filing equipment firm after which students could recommend which equipment to purchase for a situation described by the instructor.

Travel Arrangements

The students should be shown the *Official Airlines Guide* electronic version. This could be accomplished by contacting the publisher and getting the names of the subscribers in the local community or requesting promotional material from them.

Planning and Facilitating Meetings

An activity for demonstrating the use of technology in meetings would be to show an electronic meeting board that has printer capabilities. The students should be shown how meetings for a firm are scheduled electronically with the computer keeping records on the executives and the facilities.

Collecting Business Information

Have a vendor present a data-based computer system that facilitates collecting information for firms. Another project could be a student report of the retrieval system in use at the local or school library.

Presenting Statistical Information

Have students present a series of statistics in various graphic forms through the use of a computer.

Reports, Procedures Writing, and Publications

In teams, the students should prepare a report on the latest office technology in rough draft form. The second part of the project would be the preparation of the format instruction for the word processing center. The teams would then exchange reports and instructions and make a final copy of the report, using the other team's instructions.

Banking Responsibilities

Two banking representatives could present a panel discussion on the changes that electronic fund transfers have made on the banking industry. Included in this discussion should be a future banking perspective.

Investments and Insurance

Take the class to a local brokerage firm to see how electronic transfer of stock exchanges takes place. A broker could be invited to discuss with the class how technology has changed the investment industry and how it has affected the skills needed by that industry. A representative of a national real estate firm could speak

to the class on how telecommunications has increased the ability of firms to help people relocate quickly and easily across the country.

Payroll and Tax Records

Take a small payroll and have the students calculate it by hand, write the checks, and complete the payroll transactions. Another group of students could take the same payroll and complete it on the computer. The two groups could then present a class discussion of the changes and advantages of computerized payroll accounting.

Producing and Processing Legal Papers

The students should be given an assignment to fill in standard legal forms just as they would do in an office. The students could survey legal offices, making note of equipment and skills especially needed in this field.

Selecting the Right Position

The students should each be videotaped in a mock interview. Members of the advisory committee could be used as interviewers or other employers. It is important that the instructor not be the interviewer as the student will not react with the normal amount of pressure. The taped interviews should then be reviewed by the student, the instructor, and if possible, the interviewer.

Planning for Your Professional Future

Have the students list seminars and workshops or educational courses that they feel would add to their ability to cope with today's technology. They could be asked to present an educational plan for future development with emphasis on technology.

Fulfilling Your Administrative Role

Have the students prepare a report on the human relations problems that management has encountered with the development of technology. This project could be accomplished by interviewing two managers of firms that utilize integrated telecommunications systems.

CHAPTER 7

Integrating Technological Changes into The Four-Year College Curriculum

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Historically, technological changes in the four-year college/university have gained momentum from both internal and external sources. When the technology changes evolve from internal sources, the pioneering efforts have frequently started on the elementary school level. Thus, there has been a vertical movement in the use of technology—up to the four-year college/university from lower educational levels, especially the elementary school level through the secondary school level. Conversely, when external intrusion of technological developments occurs, the four-year college/university is often in the forefront. In that instance, there is apparently a horizontal movement from the producer of the technology to the user, namely, the four-year college/university.

Strategies of teaching with new technologies in the four-year college/university have mainly been derived from lower levels of institutional education, especially the secondary schools. This can be accounted for to some degree because of the emphasis given in methods classes. Secondary business education teachers who are the recipients of these college/university level methods classes are normally on the forefront in utilizing the new technology.

There is a dichotomy on most college/university campuses between business teacher education/office management and other disciplines within the college of business program; it also exists frequently between the programs in the college of education and the college of business. This gap between business teacher education/office administration and other business-related disciplines on the college/university level, along with the reimbursement of business education programs on the secondary school level, leads to a faster incorporation of technology in teaching in the business teacher education/office management areas.

The need for broad curricular changes to incorporate new technologies is observable within all disciplines on the four-year college/university level. Some of the areas which need greater focus are keyboarding/typewriting, accounting, information processing, business communications, office procedures, basic business and economics, and marketing and management.

KEYBOARDING/TYPEWRITING

The four-year college/university is in a unique position to integrate technological changes in keyboarding/typewriting courses. There is a trend

to change the title "Typewriting" to "Keyboarding." Furthermore, an opportunity exists for expanded enrollment in keyboarding to areas outside the typical business education department to majors throughout the four-year college/university. New technologies are providing for quicker and easier teaching of the three basic stages of keyboarding/typewriting on the four-year college/university level—keyboarding, skill development, and production. All majors within business teacher education and office management should complete the three stages. Nonmajors should complete at least the first two stages.

Keyboarding stage. Once a student has reached the college/university level, keyboarding skills can range from nonawareness to high proficiency. In the past, many colleges/universities placed students in keyboarding/typewriting on the basis of typewriting classes taken on the secondary school level. With the advent of the microcomputer and software, almost all students regardless of their secondary school background will have had experience in keyboarding. Therefore, articulation from the secondary school level to the four-year college/university level in keyboarding/typewriting becomes more difficult to manage. This is obviously caused by the varied experience students have had with keyboarding on lower levels. In many cases, the college/university keyboarding/typewriting instructor is faced with "corrective" rather than "preventive" measures in teaching good keyboarding/typewriting techniques.

There are several good tutorial and/or CAI (computer-assisted instruction) packages on the market that provide individual instruction for the keyboarding stage. Several of the software packages include graphic illustrations and animated pictures to emphasize the usage of correct techniques. Even with this software the instructor is an essential element in ensuring that students are using correct techniques.

Tutorial packages do not negate the use of other more traditional methods of teaching the keyboard when typewriters only and/or typewriters and microcomputers are in the classroom. However, newer technological developments of videotape equipment enhance the teacher's ability to more adequately analyze keyboarding techniques regardless of the hardware/software being utilized.

Because keyboarding ability varies so greatly among students, it appears essential that any four-year college/university curriculum with keyboarding/typewriting should provide an opportunity for learning/relearning/reviewing keyboarding. The focus should thus be placed on an individualized approach in assisting students to move from the keyboarding stage to the skill development stage.

Skill development stage. Once the keyboarding skill is attained, the next stage is to develop speed and accuracy (skill development). Whether or not a student is taking keyboarding/typewriting for personal or vocational purposes, the skill development stage is essential. The content of this stage most frequently consists of timed writings and short problems. Even limited production work should be included, especially if students do not plan to continue beyond this stage. More research is needed to determine the length

of time desirable for adequately preparing students on the four-year college/university level for optimum skill development.

The most recently developed technology for skill development of keyboarding/typewriting is software which provides for automatic pacing of students in developing speed and accuracy. These software packages incorporate the more traditionally tried-and-tested structured drills and timings but additionally assist students to eliminate laborious and time-consuming computations in arriving at speed/accuracy scores. In addition, there are some CMI (computer-managed-instruction) packages available to automatically maintain an updated progress record of the students.

Production stage. Production work should emphasize the four major documents utilized in the business world, namely, letters, memos, tables, and manuscripts/reports. More than 100 word processing software packages are available on the market for use in assisting students to develop the production skills in working with these documents.

The surge of the electronic typewriter in replacing the traditional electric typewriter should be given consideration in production work in keyboarding/typewriting classes. Transfer of training from the electronic typewriter to the microcomputer, and vice versa, often causes minor difficulties. Therefore, preparation on both types of equipment should be provided when funds are available.

ACCOUNTING

Integrating technological changes into the accounting curriculum on a four-year college/university level should be both intensive and extensive. The accounting principles classes should place emphasis on intensive use of microcomputer software that is mainly limited to that which correlates with the textbook. Therefore, accessibility of the microcomputer for all students within the four-year college/university is a necessity.

As the student progresses to the higher levels of accounting and moves into specialties, the use of software should become more extensive. Before the recent development of the microcomputer, computers provided functions mainly applicable to numerical data processing which is the core of the accounting process. Development of microcomputers and stand-alone units made possible the integration of the microcomputer and the accounting content.

Principles of accounting. The integration of microcomputers into the accounting principles classes in the four-year colleges/universities has created at least three dilemmas: (1) When should the microcomputer be integrated within the principles classes? (2) What is the ideal ratio of the number of microcomputers to the number of students? (3) What is the appropriate use of class time and lab time in utilizing microcomputers?

There are two major schools of thought regarding the integration of microcomputers in accounting principles classes: (1) teach accounting principles manually followed by the introduction of the microcomputer, and (2) teach principles manually and introduce the microcomputer concurrently.

Most authors agree that the first method is more appropriate. However, there is another school of thought among the authors of certain accounting software packages that teaching accounting principles manually is secondary to using the microcomputer. Thus, they advocate teaching accounting principles and microcomputer usage simultaneously with more emphasis on the use of microcomputer.

Ideally the use of one microcomputer per student is most desirable. However, from a practical, economical viewpoint, this does not appear feasible. When the one-to-one ratio is not available, one approach would be to have one group of students working manually and another group working with the microcomputer. It also appears psychologically and educationally sound to utilize the "buddy system" in which one student is keying the accounting data in the microcomputer while the other student is relating the information to be inputted. In this case, switching one student frequently from one task to another is highly desirable. It also provides the teacher more flexibility in classroom management.

Learning accounting principles requires out-of-class assignments. Sometimes these assignments may be completed in scheduled labs and/or other times completed outside the classroom or lab setting. When there is a low ratio of number of microcomputers to number of students, the pre-established labs are highly desirable. Also students who need special tutorial assistance with principles and/or additional preparation in using microcomputer accounting software can receive benefits from these labs. Students should also be encouraged to purchase their own microcomputers to use in completing accounting assignments.

Advanced accounting and specialty accounting. Because of the diversity of operations, especially analyzing data in intermediate accounting, advanced accounting, and specialty accounting including cost accounting, income tax accounting, managerial accounting, etc., further dilemmas arise in using the microcomputer. Although there is limited application of database management in these areas, spreadsheets can be utilized to increase the accuracy and efficiency of the accounting functions. The use of graphics is also increasing in advanced and specialty accounting.

In accounting principles courses emphasis is most often placed on the recording of transactions, with only limited emphasis on summarizing and analyzing as compared with the content of intermediate and advanced accounting courses. The spreadsheet provides nearly unlimited application for summarizing and analyzing data which are emphasized in the more advanced and specialty levels of accounting courses. However, the limitations of the spreadsheet should be recognized in relation to manual systems and other computer applications programmed in COBOL, BASIC, Pascal, etc. Regardless of the source of the spreadsheet applications, "what if" questions can be asked and responded to almost instantly and without tedious, time-consuming manual computations.

More specific software applications for specialty accounting courses are also available and/or can be developed to meet course content requirements. For instance, several income tax accounting software packages can be used

to enhance the learning of income tax theory and practice as well as the preparation of actual tax returns. This type of software decreases the need for most manual computations and increases accuracy and efficiency in tax reporting.

Some of the specialty fields may require actual visits by students to computer facilities that, because of their uniqueness or cost, cannot be duplicated within the classroom. Senior level students can be provided internship experiences with cooperating businesses and industries that use technology not readily available in a school setting.

INFORMATION PROCESSING

The Policies Commission for Business and Economic Education defines information processing "as a collection of word and data processing equipment, procedures, software, data, and people that integrates the subsystems of the organization and provides information for the user. Information is processed data. Data are input facts and figures; whereas, information is the output for decision making."

Information processing, combining data processing and word processing, is rapidly becoming a popular offering on the college/university level. Some of the content in the information processing course(s) may be included in separate offerings such as business communication or office procedures. This content will be discussed later in the appropriate sections.

Overall concept. Based on the concept as defined by the Policies Commission for Business and Economic Education, information processing represents a broader view than a series of one or more courses entitled "Information Processing." If a four-year college/university takes this overall viewpoint, then several functions involving data processing and word processing should be included within the courses throughout the curriculum. Even reproduction, distribution, and records maintenance would be included within separate course offerings.

If information processing is offered in the overall curriculum within several courses with varied titles, frequent changes will be necessary in these courses because of the dynamic nature of the subject. The application of the computer to the management and flow of information in the office should be reflected in the course content as expanded use of the microcomputer is experienced.

Under this overall concept of information processing, careful consideration should be given to the scope and sequence of courses, with a special emphasis on instructional levels. Great care also needs to be exercised in planning and maintaining an overall curriculum that will foster close cooperation between and among the administration, instructors, business and industry representatives, and students within the four-year college/university.

Separate courses. If separate course offerings are to be included in the curriculum with major emphasis on information processing, it appears that a minimum of at least two basic course offerings should be incorporated: data processing and word processing. Data processing would include topics such as principles of data processing, data entry, database management,

spreadsheet, statistical analysis, programming, etc. Word processing would include topics such as principles of word processing, text editor, spelling checker, antonyms/synonyms, mail merge, preprinted forms, OCR (optical character reader), integrated package features, etc.

BUSINESS COMMUNICATION

Business communication on the four-year college/university level has traditionally been named the most essential and valuable course taken by business majors. Two technological developments—both in existence for about 40 years—have greatly affected the content of business communication. Only in recent years, however, have these technologies—microcomputers and voice-transcribing equipment—been refined for easy accessibility and wide use in business communication classes.

Microcomputers. Although the content related to verbal communication has not changed greatly, written communication has gone through a technological revolution. An average easily portable microcomputer now has the same capacity as equipment that would have taken the space of two full car garages in the early stages of computer development. On a microcomputer, revisions can be made easily within seconds; whereas, making changes with a typewriter involved retyping complete documents, which sometimes would require hours.

Although emphasis in business communication on the four-year college/university level most often focuses on the product, the microcomputer provides a process of text editing and revision. Students are allowed to think as they write without the added burden of attempting to manipulate the text as they progress.

With the advent of the microcomputer, certain methods of communication not previously available can be incorporated into the business communication course. For instance, it is now possible to send text via telephone line by the use of the modem. Other technological developments that have impacted and will continue to impact business communication content are microwave/satellite communication facilities, facsimile, fiber optics, telex/TWX, laser technology, and teleconferencing.

Voice-transcribing equipment. Although voice-transcribing equipment has been in existence for many years, only through greater miniaturization and easier voice editing has it reached a level of acceptability that appears significant for business communication. Thus business communication has taken on a new dimension to include dictation as an integral part of the course content.

Surveys of national trends indicate that symbol shorthand offerings are decreasing significantly. To some extent, this void is being filled by the developing proficiency in transcribing from equipment containing dictated content. This does not negate the use of symbol shorthand, but rather it provides for possible increased inclusion of alphabetic and machine shorthand. The ease of transcribing alphabetic shorthand should increase the need for dictation to remain as a viable input alternative in business communications.

Machine shorthand is now available that allows for direct text editing from the dictation and immediate transcription of the dictated document.

OFFICE PROCEDURES

Office procedures on the four-year college/university level is going through a transition. Once a one-dimensional course with emphasis on secretarial/clerical training only, it is now listed under varied titles with special emphasis on office machines applications, secretarial/clerical practices, and records management.

Office machines. In the past, office machines or office appliances was often a course that replicated manual office operations. As a universal numeric input device, the 10-key pad appears to be the only office numeric appliance that requires automatization of the touch system. Drill work is still essential in developing high proficiency with the 10-key pad. Conversely, other office appliances, often taught together in a separate course, generally require only minimal skills to operate. These include copying machines, collators, microfiche readers/printers, etc.

It may not be cost effective for four-year colleges/universities to own only certain office machines or appliances. Students can gain adequate operational knowledge and skills for these machines through actual hands-on experience in offices through field trips or other planned educational experiences. Certain office machines may also be included in the course content and handled through student discussion, resource persons, and/or other appropriate teaching strategies. Whether offered separately or integrated with another course, the office machines and appliances included for student use should also be based on occupational surveys of graduates and current practices in offices.

Secretarial/clerical practices. Several four-year colleges/universities have either dropped their associate degree program or modified or added a four-year administrative secretarial/clerical program. More emphasis has been placed on administrative/managerial activities, especially decision making. In many cases, graduates of these programs aspire to be certified professional secretaries (CPS).

A separate course in secretarial/clerical practice appears to have no uniformity in title in four-year colleges/universities. The course is usually "capstone" in nature with interpersonal relations as a major thrust. By the time this course is taken, students should have developed skills in using the major office machines or appliances found in business offices. Ergonomics, a relatively new term to business educators, should also be an integral part of the course content. The impact of new technology should be integrated throughout the course content.

Records management. Much information is being provided about the "paperless office," regardless of the kinds of documents to be stored. Management of these documents will become more and more essential to the successful operation of business enterprises. Included in records man-

agement is information-based storage which may contain hard copies, micrographics, and magnetic storage devices.

Management of records should focus on database management software packages that are appropriate for the records management system. When presenting database management in relation to records management, the instructor should deal with at least the following two areas. First, students need to develop the concept of relational database, which is simply the association of one unit with another. Second, once the relationship is established, the planning and organizing of the database must be developed. Thus, the new technology should include a thorough working knowledge of database management and its application for students involved in records management.

BUSINESS ADMINISTRATION

New technologies are providing a way to bridge the gap between theory and practice in business administration courses in the four-year colleges/universities. Congruent with the other curriculum changes needed and in vogue in business teacher education and office management programs, the new technology for other offerings in the curriculum also centers around microcomputers. However, the emphasis in these business administration offerings is often more on the product than the process. Hence, it is assumed that office management should provide the hands-on experience for basic use of the microcomputer, with the content expertise in the respective business administration courses provided by instructors in these offerings. What appears to be needed is business teacher education and office management to serve in a support role for selected business administration courses.

Basic business and economics. Most secondary students who enter four-year colleges/universities do not have a broad background in basic business (introductory and survey courses) and economics. Just as computer literacy is needed by these students, economic literacy is also needed. Technology as common as a television set can be a very important teaching tool in basic business and economics. With the ease of videotaping programs and the use of video camera/recorders, the whole world of business can be literally integrated into classroom activities. However, caution is required in using these and similar technologies as they can sometimes become too "passive" in nature to provide for long-lasting student learning.

A relatively new concept is being fostered which interfaces the microcomputer and the videocassette recorder/player. With these two devices interfaced, students are able to interact as a result of viewing the video-display screen and responding through the microcomputer keyboard. A major need is more experimentation and additional software to make the system function more effectively.

As with accounting, it is now possible to make "static" graphs literally change before the students' eyes by inserting new or different data. Thus, there is no reason for economics instructors to present *only* one graph and state that with "everything being equal," this will be the result in terms of

economic change. Variables can be incorporated to quickly provide students with immediate feedback of results with accuracy and efficiency. Additionally, commercially available electronic database services can be provided either on a group or individual basis for students enrolled in basic business and economics.

Decision games using the microcomputer are becoming popular in the basic business and economic courses. Actual inter- or intraschool decision games can be played with the microcomputer to provide realistic activities that parallel those common to the real world. Decision-making simulations can also assist students to forecast future economic trends.

Marketing and management. Similar to basic business and economics, marketing and management courses can incorporate much of the same technology with different software content. Videotapes, microcomputers with interfaced (interacting) videotapes, and decision-making games and simulations are examples. Most of the new technological advances in the fields of marketing and management are so expensive and are occurring so rapidly that purchase of hardware and related software is usually not feasible. Pioneering efforts with artificial intelligence are an example. Hence, trade journals which usually contain up-to-date articles on new technology in the field provide excellent sources for instructors and students in keeping abreast of these developments.

Marketing, which was once mainly a person-to-person relationship, is changing rapidly to a person-to-machine relationship. Voice-activated technology as a result of input from a person or machine is only one example. Again, the cost of such equipment for classroom demonstration is generally prohibitive. In addition to trade journals and current literature in the field, marketing instructors must rely on resource persons, field trips, internships, etc., to make the curriculum current for the students.

With the availability of new technology applicable to almost any course offerings in business administration, business management students can no longer rely strictly on "teacher talk" in the form of a "canned" lecture. If this is the common mode of teaching, the students would need only to check out a series of audio and/or videotapes at the beginning of each semester and view them on their own—returning only to take a paper and pencil test on the content. Similarly, if some of the more advanced technology is utilized without the instructor serving a useful role as a facilitator, the same process is applicable. Therefore, a variety of up-to-date software that requires more than learning an operation through an instructional, operational manual needs to be considered as an important aspect in the course content and teaching strategies. This means that, in some cases, the content materials must be developed in-house by the instructor. For example, reading cases and writing solutions has been a common mode of instruction in many management courses throughout the nation. Now videotapes can depict actual cases or role-playing situations, and the students can be assigned to respond to the case via the same mode of instruction, i.e., videotape.

SUMMARY

Curriculum changes are inevitable in four-year colleges as a result of new technologies. Integrating them into the total curriculum is a major challenge, especially with decreasing enrollments and shortage in operational and capital outlay budgets.

The center of the new technological changes appears to be the advent of the microcomputer which has still not fully reached its potential in the four-year college/university. The new technologies discussed here should not be limited to one discipline in the field of business. Innovative ways of integrating these technologies into the total curriculum should receive major emphasis. However, caution is advised in assuring that redundancy and overlapping do not occur in their use between and among courses and course content.

Regardless of the problems encountered, technological changes must be integrated into the four-year college/university. Some of the areas in the business field which need the greatest focus in this process include: keyboarding/typewriting, accounting, information processing, business communication, office procedures, basic business and economics, and marketing and management.

CHAPTER 8

Teaching Computer Technology for Professional and Personal Use

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America has moved from the Industrial Age to the Information Age, and the coming years will find more and more people earning their living by processing data. The students of today will be dealing with data—gathering it, storing it, sorting through it, recombining it, analyzing it, and interpreting it. Electronic technology has made it possible to generate an enormous number of facts about a given topic. Just as computers have made a flood of data possible, they also make possible an analysis process through which facts may be transformed into meaningful information. It is imperative for students to learn to utilize the products of technology for analyzing data, discovering new relationships, solving problems, making decisions, and communicating information.

The emphasis on technology should not diminish the efforts to teach students to read, write, do arithmetic, think, speak, and solve problems. It is imperative for young people to be proficient in the basics. However, it is just as important for them to know when to do pencil and paper calculations or mental arithmetic and when to use a calculator or a computer. The traditional basics must not be overlooked, but neither can learning the proper use of technology, a "new basic," be ignored.

The National Commission on Excellence in Education recommended that computer science be a basic subject in the schools. Understanding and using technology should be a component of the program to produce well-educated citizens. However, teaching a course dedicated to programming and operating a computer separated from the rest of the curriculum will not provide the broad range of experience necessary to understand the uses of technology in the real world. Computer science is a valuable course in a comprehensive educational computing plan. It is appropriate for students who may become engineers, scientists, or computer specialists to take such a course. While the study of computer operation and languages is good for some students, computer applications that involve information management are appropriate for all students.

Computer applications that involve collecting, storing, organizing, analyzing, and converting raw data to information should be studied in a wide variety of settings. Professionals apply computers to manage collections of information such as readings from medical equipment, possible flight plans,

and sales projections. Students also have information to manage. Their collections may include results from experiments for a science project, the budget for the production of the literary magazine, and/or a historical newspaper for social studies. Information is information, and the techniques for effectively handling it are the same regardless of the setting. It is realistic to expect all students to learn to use a computer to manage information at a level equal to their general level of education.

Hardware, including calculators, electronic typewriters, and word processors, as well as computers, plotters, and other fancy input and output devices, is becoming readily available to students in schools. Software for word processing, database management, spreadsheets, graphics, and telecommunications is flooding the educational market. The new machines and materials provide a set of technology tools that may be applied in all instructional disciplines. Students should not only know how to use the tools, they should grasp the concept of information management in the fullest sense. Consequently, computer use should be integrated into all areas of the curriculum so students can learn to use technology in as many situations as possible.

The reality is that most teachers and students do not have an adequate knowledge of new technology to integrate information management techniques into their teaching and learning styles. The meaningful use of technology presents a multidimensional problem to which a single dimensional solution may not be applied. The components of a solution include methods through which students may learn to use the tools without diverting time from subject area content, an extensive teacher training program, and a commitment to secure the necessary hardware and software as the students and teachers are ready for their use.

Some teachers use methods to incorporate the use of the tools into their content lessons. These techniques are commendable, but not practical in most situations. Some students may come to the class with a prior knowledge of the tools. Their experience may have come from home or from instruction in the elementary school program. Teachers cannot expect this knowledge of their students now; but in time, more and more students will be entering high school with some skill in managing information. Another alternative is to place a course in the high school curriculum that focuses on information management for personal and school use. Such a course, being offered in the DeKalb County, Georgia, business education departments, is recommended for ninth or tenth grade students; however, students from all grades may take the course. *Readers should know that this course is not taught in isolation.*

A similar course is taught for teachers after school on a voluntary basis. In this course, teachers learn to use the technology tools and they see examples of how information management may be used in their subject areas. Their assignments include the development of models that may be used in their classes. The instructor for the course visits in the teacher's classroom to see how technology is being used.

After a teacher has invested the time to learn to use the technology tools,

it is essential that the resources be available to integrate the new skills into instructional methods. A sufficient number of computers with word processing, database management, spreadsheets, and graphics programs should be available for use by the students and teachers.

Finally, there must be a concentrated effort by the faculty to work with the students to use technology to improve learning in the school. Without this effort, all the hardware, software, training, courses, and course guides in the world will not make a difference.

The remaining part of this chapter will describe the course called Technology Tools that has been developed to teach information management skills for personal and school use. Please notice the emphasis is on applications, not on mechanics.

The writing team selected to develop the course had experience with IBM and Apple computers. They were veteran teachers who had good computer skills. Each unit of the course was written by a team member and submitted to the group for review. The material was used in a summer class with the instructors who would teach the course in the fall, and revisions were made as a result. The following are examples of lesson plans, objectives, and student handouts used in the major units.

COURSE DESCRIPTION

Content and objectives:

KEYBOARDING. The first unit of the Technology Tools class is the keyboarding unit which involves introduction to the mechanics of computer and software usage; development of keyboarding skills including keystroking, punctuation, and spacing; and the development of keystroking speed and control. The main goal of the unit is mastery of letter and number keyboarding skills. These skills are fundamental to the students' successful work in the other units such as word processing.

The objectives for this unit are that the student will be able to:

1. Demonstrate the appropriate keyboarding posture and reach techniques while typing.
2. Type with 90 percent accuracy a short paragraph containing all of the letter and number keys without looking at the keyboard.
3. Type for a one-minute period at 30 GWAM.
4. Answer with 80 percent accuracy questions concerning spacing, posture, and keyboarding techniques.
5. Identify and use the keyboarding and function keys (tab, return, space bar, etc.).
6. Strike the symbol keys with 80 percent accuracy.
7. Identify with 80 percent accuracy letter, number, and function keys on a blank keyboard.

WORD PROCESSING. In the first unit of word processing, the students learn the fundamentals of word processing such as entering and editing text on

the sample files data disk, creating a student data disk, printing a document, and centering.

The second unit involves the word processing cycle, functions, applications, and a major project. Keyboarding skills are stressed during the entire unit. On completion of the unit the students can create letters, tables, and reports with footnotes using the word processing program, and they are encouraged to do book reports, term papers, etc. on the word processor. The computer labs are open to students before and after school, and computers are also available in the media center for their use.

The objectives of these units are that the student will be able to:

1. Create a data disk using one or two disk drives.
2. Edit and save a file.
3. Set margins and use printer options to create a hard copy of a document.
4. Center a document horizontally.
5. Use a letter placement table and create and print a mailable letter.
6. Use tabs and rough draft copy to prepare double-spaced paragraphs.
7. Use tabs and align figures to prepare a table centered vertically and horizontally.
8. Prepare and print a two-page unbound report with underlined and boldfaced words, printed page numbers, and footnotes with superscripts.
9. Prepare copy with bullets and hanging paragraphs.
10. Interchange contents of two documents using the clipboard.
11. Complete research in the library to prepare a formal report with footnotes.

DATABASE MANAGEMENT. This unit introduces students to database management, its applications, advantages, and limitations. Students are taught to gather information, create and edit a database file, display records, and create a report. A project is included in this unit in which the students learn to use a merge program to send personalized form letters to customers.

When this unit is completed, the students should have a good understanding of what a database consists of and what function it has in business as well as in school and personal life. Students are encouraged to use the database to complete assignments for other classes. Teachers in other subject areas are happy to cooperate in making assignments that can be completed in the Tech Tools class.

Examples of student work include keeping bibliographical notes, results from experiments, facts on musicians, countries, works of art, etc.

The objectives of this unit are that the student will be able to:

1. Define and discuss database management.
2. Create and edit a database file.
3. Print reports from a database file.
4. Print form letters and address labels.
5. Name advantages and disadvantages of using a database.
6. Integrate a database program with word processing and mail merge programs.

SPREADSHEETS. This unit introduces students to spreadsheets, what they are, and how they are used. Through practice they will learn the format, formulas, and functions used in spreadsheets. Terms used in discussing and working with spreadsheets are an important part of this unit. Students are encouraged to create spreadsheets for use in other classes just as they have done with the database programs.

The objectives of this unit are that the student will be able to:

1. Define spreadsheets and list examples of how they can be used.
2. Edit a previously prepared spreadsheet.
3. Use a spreadsheet to solve and analyze math problems.
4. Create a simple spreadsheet containing horizontal lines, formulas, and value formatting.
5. Create a complex spreadsheet containing lines, formulas, value and label formatting, column headings, and split screen.

GRAPHICS. Through the use of a tutorial program, students are introduced to line, bar, and pie graphs. The program provides several activities that involve student participation. For example, students are asked to type nine-letter words. After each word is typed a bar is drawn on a graph to show their typing speed. Upon completion of the primer, students complete different assignments to construct graphs using a graphing program. For the unit project, students are placed in small groups and directed to produce a survey with multiple choice answers on the word processor. Each group member is to have several friends complete the survey on Scan-Tron answer sheets. The results are compiled with an item analysis program, the data is converted to percents, and the results are graphed. A final report including the survey, graphs, and their interpretation is produced.

After students complete the unit they will be able to:

1. Apply basic graphing concepts to graph construction.
2. Relate graphed data to recorded events.
3. Recognize inappropriate uses of graphs.
4. Formulate general and specific interpretations of graphs.
5. Produce graphs based on both name/number and number pair data.
6. Graph name/number data as a line, bar, and pie graph.
7. Adjust the scales of the graphs produced.
8. Print both data-entry screens and graphs.

TELECOMMUNICATIONS. In this unit students are introduced to telecommunications through lecture and discussion and by using the Guidance Information System and telecommunications simulation. Included in this unit are the uses of telecommunications, hardware needed, terminology, connection of modems, and selection of software.

The objectives of this unit are that the student will be able to:

1. Discuss terminology and uses of telecommunications.
2. List considerations in selecting a telecommunications package.

3. List advantages and disadvantages of electronic mail, electronic funds transfer, and telecommuting.
4. Use the Honeywell terminal to log onto the county's mainframe and use the Guidance Information System.
5. Use telecommunications software on a microcomputer to connect with another microcomputer, talk to the other user, and send and receive information.

SUPPLEMENTARY UNITS. The units described below may be incorporated into the major units to provide experience with a variety of applications. They may also be used to keep students interested prior to a holiday or as a reward for exceptional performance.

1. *Newsroom.* This unit teaches students to develop a newspaper or newsletter. It will give additional computer usage experience and skill development to more advanced students. A common activity for many classes is to have students create a newspaper of current events that may have occurred in the period of time which is being studied.
2. *Spell checker.* This is a program used to show students the strengths and weaknesses of computer proofreading. Students find the program useful when preparing papers and reports for their other classes.
3. *Print shop.* This program can be used to make cards, signs, letterheads, banners, and for drawing graphics. Students create their own personal letterhead on which they print letters in the word processing unit. The program is also useful for report covers.
4. *Disk operating system.* This unit introduces students to operating systems. For Apple there is ProDOS and DOS 3.3. There are different versions of DOS for IBM also. A good understanding of what DOS is and how it is used is required for successful file manipulations and changes between programs. For example, AppleWorks files are to be recorded in ProDOS while Newsroom files are to be recorded in DOS 3.3. In the real world students should realize that the disk operating system is one factor that differentiates between computer systems.
5. *Merge program.* This program is used to teach students to merge two files, one from word processing and one from a database. A form letter to parents inviting them to an open house in the Tech Tools lab is a good project for this program.
6. *Careers.* In this unit students will become aware of the growing number of jobs in the computer field. They will become familiar with the names and job descriptions of several occupations and with the skills and education necessary for these computer occupations.
7. *Motion pictures and video cassettes.* A list of movies and videos about computers has been compiled for use in supplementing discussion sessions.

Teaching suggestions:

While field-testing the course, trouble spots were identified and methods for avoiding them were devised. Some examples are listed below:

1. Keeping up with proper care of equipment and software is of primary importance. Assign all students to a particular computer each day.
2. Number computers and software and see that students use only the software that corresponds to the number on their computer.

3. When assignments are to be printed, a rotation to computers with printers should be planned in advance.
4. Providing enough computers is also a troublesome factor when more students are scheduled for the class than there are workstations. In the keyboarding unit it is especially important that all students have a keyboard to work on at all times. If computers are not available, use typewriters.
5. When giving instructions assume that all students have single disk drive computers.
6. To keep students' attention during instructions, use the master switch (if one is available) or have students turn off their monitors.
7. Students should be responsible for keeping their work areas neat and clean.
8. Every student should have a disk for use in the class and be responsible for having it in class every day.
9. Because the Technology Tools course has no textbook, it is taught by lecture, demonstration, and worksheets. Duplicating worksheets may present a problem. To keep duplicating to a minimum, let students use class sets and have them take notes in a separate notebook that they provide.

Lesson plans and worksheets:

The writing team developed the Technology Tools course guide in two sections. One section contains all student handouts used in place of a textbook to teach the course. These may be duplicated for each student to use or in class sets. The other section is the Teachers Guide. This section contains quarter plans, unit plans, specific plans, tests for several units, and keys for these tests.

All teachers were given a paper copy of the course guide and another copy on diskettes. This way the teacher can easily improvise or combine material when needed. Students can see the teacher using the same tools they are learning to use.

To aid the classroom teacher in implementing the course as smoothly as possible, each plan follows a specific format. The quarter plan includes content, materials needed, evaluation procedures, and teaching suggestions. Each unit plan contains a time frame, objectives, materials and preparation, and more specific teaching suggestions. Daily plans are more detailed and contain the subject to be covered, objectives, method of instruction, materials needed, how the class should be organized, and specific content to be covered. The lesson plans and student worksheets illustrated are typical of those developed for each unit in the course.

The following are examples of the standard format lesson plans and the detail in the worksheets that are part of the course guide.

KEYBOARDING UNIT — Lesson Plan #24

(Developed by Tim Thompson, Avondale High School)

Subject: *Microcomputer Keyboarding* Lesson 19
Check Technique/Increase Control
Evaluation-Technique Check

Objectives:	1. Reinforce all letters. 2. Master letter reaches and sequences. 3. Check space bar/shift key technique. 4. Increase paragraph GWAM. 5. Improve typing control.
Methods:	1. Subjective evaluation—technique 2. Student work
Materials:	1. Technique Check Sheet—Teachers Manual pp. 20-21 2. Microcomputer Keyboarding Disk #3 3. Text
Class Organization:	Students at computers
Content:	1. *Microcomputer Keyboarding* Lesson 19 2. Text Lesson 19 3. Individual evaluation (technique checklist)

WORD PROCESSING UNIT

(Developed by Rose Wiggins, Towers High School)

The following worksheet illustrates the detail that should be included when students are beginning to use an application program.

WORKSHEET—CREATING A DATA DISK

1. Boot your system with the AppleWorks start-up disk.
2. Insert the AppleWorks program disk and press return.
3. Key in the current date and press return.
4. Use the down arrow key to highlight 5 (Other activities) and press return.
5. Highlight 1 (Change current disk drive) and press return.
6. Screen now shows Change current disk. Highlight 1 (Drive 1) and press return. Notice at the top of the screen that the drive has now been changed to drive 1. Other activities is the heading at the top of the screen.
7. Use the down arrow key to move to 5 (Format a blank disk). Press return.
8. You are now prompted to type a disk name. Note that the disk name can consist of up to 15 letters, numbers, and periods. The first character must be a letter.
9. Key in your last name as the file name and press return. Note: The disk to be formatted must be placed in drive 1 now.
10. Press the space bar. The disk will turn for a short while. When formatting is completed, the screen will show that the disk has been successfully formatted.
11. At the top of the screen on the left, the file name appears and you are ready to begin entering information in the new file.
12. Press escape twice. This will take you back to the Add Files Main Menu. Highlight 6 (Quit). Remove the disk from the disk drive and put it in the protective cover. Turn off the monitor and the computer. Get a label from your teacher, and write your name on the first line. Then write storage disk on the second line. Put the label on the disk.
13. Return all disks to the storage box on the teacher's desk.
14. If time permits, go through the steps again for "Creating a Data Disk."

After students complete the worksheet, it is a good idea to review what was done and discuss it in class. The exercise is a good vehicle for this activity.

CREATING A DATA DISK EXERCISE

NAME _____ DATE _____ PERIOD _____

1. If you have only one disk drive, what must be done before creating a data disk?
2. Can you name a file Willingham? _____ Why or why not?
3. List the two things to remember when giving a file a name.
   A.
   B.
4. When the Other Activities Main Menu appeared, what selection did you make? _____ Why?
5. After your disk has been formatted, what words do you see on the screen?
6. What is written on the label of your newly formatted disk?
7. List the six steps involved in formatting (creating) a data disk.
   A. D.
   B. E.
   C. F.

Do you understand the process of creating a data disk? If the answer is no, review that handout "Creating a Data Disk" and go through the steps again.

DATABASE MANAGEMENT UNIT

(Developed by Roberta Middlebrooks, Walker High School)

WORKSHEET 1—CREATING A DATABASE

1. Place start-up disk in drive 1. Turn on the computer and monitor. This is booting the system with ProDOS.
2. You will get a menu on the screen asking for Program Disk. At this point, take the disk out of the drive and insert the program disk. Press the return key.
3. When the Main Menu is displayed on the screen, select option 1: Add files to the desktop.
4. The Add Files Menu will appear and ask where to find the file. You want to select Make a file for the: option and move cursor by pressing the down arrow to number 4: Database. Press return.
5. The Database Menu will appear and ask how you want to create the file. Select option 1: From scratch. Press return.
6. Look at the bottom of your screen—you are being asked to name your new file. Name your file and press the return key. NOTE: Your file name can be up to 15 characters long, and must begin with a letter of the alphabet.
7. Type in the categories in your file. Category names can be up to 20 characters long. Press the return key after each category name, including the last one. The following are the categories you will use for this exercise:
   FIRST NAME:
   M.I.:
   LAST NAME:
   ST. ADDRESS:
   CITY:
   STATE:
   ZIP CODE:
   SS#:
   TELE. NO.:
   DATE EMP:

POSITION:

After you have entered your categories, look over them carefully for any correction you might need to make. Use your up and down arrows to move vertically on the screen and the left and right arrows to move horizontally. Pressing the delete key will remove unwanted text to the left of the cursor. When all corrections have been made, press the escape key to go to the next menu.

8. AppleWorks should tell you at this point that the file does not contain any information and that you can begin inserting new records by pressing the space bar. The section "Records into a New File" tells how to continue. The Insert new records menu should appear on the screen and this is where you begin typing your data for each category.

(Note: At this point the teacher must provide a sheet with data to be entered. The other worksheets use the data that is entered in this exercise.)

9. When you have finished each record, check it carefully for errors. If you are satisfied that all is well, go to the next record.
10. When all records have been typed, save your database file by pressing the open apple and the S key.
11. When you have saved your database file, turn off the power and reboot the system. The main menu should be on the screen. Select option Add files to desktop. The screen should display all the files available to the desktop. Move the cursor with the arrow key to the file name you want moved to the desktop and press the return key. The file should appear on the screen.

An exercise that the students enjoy and gives them an opportunity to use the database functions is to create a "favorite" file. Let them create categories of favorite items. Create the file and let each student fill in the information. Interesting groupings occur when sorting and record selection is done.

SPREADSHEETS UNIT

(Developed by Jackie Hanna, Columbia High School)

SPREADSHEET WORKSHEET 2—CREATING A SIMPLE SPREADSHEET

(Introducing changing column width and formatting for dollars and cents)

Now that you know how to edit a spreadsheet, you will prepare one from scratch. Read the problem given below. Then follow the steps for creating a spreadsheet that will enable you to solve the problem.

Problem A. You want to go shopping today. You have been given $50 to spend. Set up a spreadsheet that will help you figure out how many albums you can purchase at $8.25 without going over the $50 limit. (Assume sales tax is already figured in the $8.25 price.)

Directions for setting up the spreadsheet:

1. From the Main Menu, choose Add files to desktop. Then, choose Make a new file for the spreadsheet from the Add Files Menu. Choose From scratch from the Spreadsheet menu.
2. Choose the filename Shopping Spree for this worksheet. Press return.
3. You now have an empty spreadsheet showing. Because the default column width is 9 spaces per column, you'll notice there is only enough room on the screen to show Columns A-H. We want to change the column width of Column A to 15 spaces.

That way we will have enough room to write Available Cash in one cell. Follow these steps:

CHANGING COLUMN WIDTH

a. Move cursor block to Column A if it is not already there.
b. Press Open Apple-L (layout). At the bottom of the screen you have several choices. Move cursor block to Columns, press return and the column will highlight.
c. You are now asked to highlight the columns you want changed. Since you just want Column A changed, simply press return. However, if you wanted to change several columns, you would use the arrow keys to highlight the columns you wanted changed. (Press return if you haven't done so yet.)
d. Now you have more choices at the bottom. Choose Column Width.
e. Follow directions at the bottom of the screen to change the column width of Column A. Hold Open Apple down as you press the right arrow key 6 times. Notice how Column A increases one space each time you press the arrow key. The other columns simply move to the right to allow for a larger Column A. Press return. (If you wanted the column to decrease in width, you would press Open Apple and the left arrow key.) Return.
f. Your Column A is now 15 spaces wide. Leave all other columns at the default width.

4. Let's use Column A to describe what we are doing. In Column A, Row 1, type the words Available Cash. Press the down arrow two times. Still in Column A, but on Row 3, type the words Item Price. Press the down arrow once. In Row 4, type the words How Many. Press down arrow twice. In Row 6 type Total Cost. You now have the explanations in Column A. The only reason we skipped Rows 2 and 5 is for ease in reading the spreadsheet. We did not have to skip these rows but it is good to spread out your work for ease in reading.
5. In Column C we want to put in numerical data (prices of items and how many we'll buy). (We'll skip Column B simply to give a little space between our explanation and our numbers.) Use the arrow keys to move the cursor block to Column C, Row 1. Here you want to type in the amount of cash you have to spend which is $50. Type 50.00. Notice only the 50 will appear. We now have to tell AppleWorks this is dollars and cents. Follow these steps:

DISPLAYING DOLLARS AND CENTS

a. Open Apple-L (layout), then follow the directions at the bottom of your screen, using the hints given in b-f below.
b. Choose Entry because we want just this one cell to read dollars and cents. (If we wanted an entire row, column, or block to be dollars and cents, we'd choose the appropriate word.) Press return.
c. Since you are typing numbers containing values, you want to choose Value Format. Press return.
d. Next, since you want dollars and cents to show, choose dollars. Press return.
e. Now you must tell AppleWorks how many decimal places to show. Since we want cents, press 2. Press return.
f. Presto, look at your spreadsheet now! The dollar sign has appeared, and two decimal places including the zeros are showing. Once you have changed the layout of a cell to read the $, you will only have to type a number (including the decimal point) in that cell. AppleWorks will automatically print the $ and show two decimal places.

6. Move the cursor block to Column C, Row 3 (across from the words Item Price). The item we want to buy costs $8.25, so type 8.25 in this cell. Notice the $ did not appear. Follow steps a-f above to format this cell for dollars and cents.
7. Skip Row 4 for now. Move down to Row 6 (Column C). In this column we need to create a formula. The total cost is determined by multiplying the item price by how many we purchase. You must tell AppleWorks to multiply the number that is in Column C, Row 3, by the number that is in Column C, Row 4, and place the answer in Column C, Row 6. (Got that?) Here's the formula, but make sure the cursor is in Column C, Row 6, before you type and be sure to type the parentheses and the formula *exactly* as given: (C3*C4) Press return after the formula is typed. A zero should appear. This is because there is no number in Column C, Row 4, yet. Before we leave this cell and go to Row 4, format this cell to read dollars and cents (follow steps a-f above).
8. IMPORTANT RULE TO REMEMBER!!! Once a formula has been set up in a particular cell, you *never* type a number in that cell. Move out of that cell immediately. You will change numbers in other cells and the cell containing the formula will adjust automatically for you.
9. Move up to Row 4, Column C. You have to determine how many items you want to bring the number in Column C, Row 6, as close to $50.00 as possible (without going over). Type in the number 2. Notice the number in Column C, Row 6, is now $16.50. Now type a 10. The number in Column C, Row 6, changes to $82.50. Experiment with numbers until you get the number closest to $50.00. The answer should be 6 items totaling $49.50.
10. CONGRATULATIONS! YOU HAVE COMPLETED YOUR FIRST SPREADSHEET.
11. Let's not stop here. We're going to play the "What If" game. On a separate sheet of paper, record the answers to these questions. Use the spreadsheet you have just prepared to compute the answers.

SHOPPING SPREE QUESTIONS:
REMEMBER: NEVER CHANGE THE FORMULA IN COLUMN C, ROW 6. YOU'LL MAKE THESE CHANGES IN ROWS 1, 3, AND/OR 4 ONLY.

1. What is the Total Cost of 7 items costing $8.25?
2. What is the Total Cost of 14 items costing $2.73?
3. What is the Total Cost of 20 items costing $.82?
4. Assume your mother gave you only $10.00. You want to buy an item that costs $3.25. How many items can you buy without going over the $10.00 amount available?
5. An item costs $4.66. The Total Cost was $37.28. How many items did you buy? HINT: Move cursor block to Column C, Row 4. Experiment with numbers in this cell until the bottom line—total cost—reads $37.28.
6. An item costs $.82. You spent $17.22. How many items did you buy?
7. An item costs $21.49. You spent $343.84. How many items did you buy?
8. Your total cost for 5 items was $165.00. What was the item price?
9. Your total cost for 12 items was $252.00. What was the item price?
10. Create another line. In Column A, Row 8, type the words Cash Left Over. In Column C, Row 8, create a formula that will subtract the total amount of cash you spent from the available cash. Change the format to read dollars and cents in the cell. Now answer this question. How much cash is left over if you were given $45.00 and bought 13 items that cost $3.29 each.
11. You begin shopping with $30.00. You have only $1.52 left. How many items did you buy if each item cost $7.12?

Turn in your answer sheet at this time. Save your Shopping Spree spreadsheet.

TELECOMMUNICATIONS UNIT LESSON PLAN

(Developed by Kaye Betz, Gordon High School)

Subject: Introduction to Telecommunications

Objectives:
1. Define telecommunications.
2. Describe ways to connect computers for telecommunications.
3. Explain what a modem does.
4. Name two methods of modem connection.
5. List several parameters involved in setting up telecommunications.
6. Define baud rate.
7. List several considerations in selecting a telecommunications package.

Methods: Lecture, demonstration

Materials:
1. Telecommunications for Teachers
2. Honeywell terminal with modem and telephone
3. GIS booklets
4. GIS information sheet for each student.

Class Organization: Lecture room. If possible, take Honeywell terminal to lecture room for demonstration, even if there is no phone jack.

Content: Refer to Telecommunications for Teachers for lecture content. Do NOT distribute copies to students.

1. What is telecommunications?
2. Difference between mainframe and microcomputer
3. Ways to connect computers for telecommunications:
   a. Micro to micro (straight communication or one set up as a bulletin board)
   b. Micro to mainframe
4. Information utility (databases, transactions, communications)
5. Dumb and smart terminals
6. Modem (modulate/demodulate)
7. Methods of connection (acoustic and direct connect)
8. Parameters (brief)
   a. Baud rate (300, 1200, 2400)
   b. Full or half duplex
   c. Originate or answer mode
   d. Character bits (7 or 8)
   e. Start and stop bits
   f. Even and odd parity bits
9. Selecting a telecommunications package
10. Uses of telecommunications (Mention these briefly today.)
    a. Home information service
    b. Encyclopedia
    c. Current events
    d. College registration
    e. College courses
    f. Electronic mail
    g. Electronic funds transfer
    h. Telecommuting

Demonstrate how to use the Honeywell (how to turn it on, put the telephone receiver on the modem, roll the paper up, etc.). Then hand out the GIS information sheet and explain how to log on and use GIS. Explain simulation, assignments and rotation.

CONCLUSION

The premise is simple. Obtaining skill in information management is an appropriate activity for all students. The strategy is clear. Teach students and teachers information management skills and expect them to apply the skills in their work. The results will be positive. We know students will learn when they are active participants in their lessons, and we know computers provide a vehicle that encourages learners to become involved in their work.

Students who learn to manage information for personal and school use will have learned the skills required to manage information for professional purposes. The "new basic"—*using technology*—can be taught without sacrificing emphasis on the fundamentals. With a strong background in *all* the basics, students will be prepared for life and work in the Information Age.

CHAPTER 9

Using Technology To Serve Special Needs Students

MERLE WOOD
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Except for the student who is identified as average in every way, the term "special needs student" could logically be applied to all other students, both those of superior ability and the less able. However, the expression "special needs," in the context used here, indicates those students who require special instructional assistance to overcome their identified deficiencies, impairments, or problems in order to be successful in their school work. It is admittedly difficult to identify what an average student is, and it is difficult to do much more than cluster special needs students into vague, general groupings. The cluster of students identified as physically handicapped could, for example, be broken into dozens of subgroups, and those groups could be subdivided further until one arrived at a specific, individual profile of the special needs of each individual student. As much as we in education have tried to group students for administrative and instructional purposes, students remain what they have always been; individuals with special strengths and weaknesses. Perhaps this fact alone brings our attention back once again to the need for improved and increased individualized instruction, whether it is delivered by new technology or old fashioned one-on-one tutoring.

Generally, those students who have physical, personal, psychological, or learning disabilities are considered to be students with special needs. This is really a defective definition for, as previously noted, it does not include the student with superior scholastic ability. Frequently superior students' needs for advanced instruction are not met for, as we tend to say in defense of this abandonment, ". . . they can make it on their own." But this attitude is not realistic nor is it fair. With the technology we now have at hand we can, with relatively little effort, provide opportunities for very bright students to do advanced work in most business education topics.

Technology is, in its simplest form, any system used to bring about a desired change. Technology is a method or a process for handling some special problem or task. Using this definition, the method used in teaching keyboarding, or any other skill or subject, is a technology. However, in today's world, we generally consider the use of sophisticated tools, equipment, and procedures as being a part of technology. When the word technology is used, we tend to add a qualifier and to mentally convert the term to "high technology."

Important technological advances frequently apply to very simple things, yet they have far-reaching applications. The steel nib replaced the quill pen and both, with their open ink bottles, were replaced by the fountain pen

with its ready reserve of ink. That device then fell to the ball point pen which, incidentally, was advertised in its early days as having a lifetime supply of ink. In this same vein another writing instrument, the faithful lead pencil, has stood the test of time and the onslaught of technology and has not been replaced in spite of the appearance, and disappearance, of other writing instruments including the computer. Thomas Watson of IBM fame was credited with observing that, after computers were introduced, the sale of the common lead pencil increased.

Some technological breakthroughs endure, as the lead pencil has. Others, even though they are effective, are put aside in a surprisingly short time to lie dormant and unused. Other innovations are surpassed by new innovations, and they become collectables and antiques, or just plain junk. We need not only to consider the latest technological developments but also to review how we can use some of the powerful educational tools that have been developed and for one reason or another are little used today.

THE PHYSICALLY HANDICAPPED

One could fill pages with technological advances that have been developed to assist the handicapped individual. This is particularly true in the recent past as we suddenly seemed to become aware that the physically handicapped do indeed exist. These recent innovations include such small but essential aids as Braille numbers on elevator buttons, street curbs and building entrances modified with ramps to accommodate wheel chairs, and reserved parking spaces for the physically handicapped. All of these are applied technology.

However, rather than focus on the physically handicapped in depth, only a few technological developments will be dealt with here. Each one is, for some special population, virtually a godsend. Take the telephone for example. Homebound students can be connected by speakerphone directly to their classrooms. (This service, while it may not be used often today, has been available for over 20 years.) Homebound students can enter into discussions, follow assignments, listen to lectures, and to a large degree, keep pace with their classes.

Another device, used by those who cannot speak, permits them to use a telephone from any point in the country. Using an accoustical coupler they attach a keyboarding device to the telephone. After dialing, they keyboard their message. The special receiving telephone has a small built-in printer and a narrow tape, very similar to an adding machine tape, where the message is printed. Thus a mute person is able to communicate to specially equipped receiving telephones located at home or in the office.

Another technological device permits users who are blind to read computer screens. An incoming telecommunications message, for example, besides appearing on the screen of a common microcomputer, is sent to a small attached device which activates pins and the message is presented in a row of raised Braille letters. The user reads each sentence fragment, calling up the next fragment from the buffer as needed. One can only imagine the impact of this device upon a blind computer user.

Individuals with what can best be described as virtually unintelligible speech can talk into a microphone which is attached to a common microcomputer. The computer will have been specially programmed with the user's speech patterns. Once the message has been completed, the computer, through a speaker, repeats the message in perfectly intelligible speech with exact pronunciation and with speech inflection. The demonstrator of this device related how the young man with a severe speech problem he had worked with cried after hearing the translation of his first message as it was interpreted by the computer and played back in understandable form. The young man said it was the first time he had heard himself speak so that he could be understood other than by members of his own household. While this application would be of interest to a limited number of individuals, it is understandable how they would look upon such a technological device as a marvel of incredible value. The implications of these amazing devices to education and to the quality of life are obvious.

Another innovation, while seemingly simple, is a keyboard with alphabetic keys that are approximately two inches in size. It can be cable-connected to a standard microcomputer. This device permits those who have severe hand tremors and would be unable to key on a standard keyboard to touch keys and communicate through a microcomputer. This same device can be modified for those who have even more extreme tremors so that one entire side of the keyboard, when any key is activated, registers a "yes." When any key is touched on the other side of the keyboard, a "no" is registered. Devices such as these provide individuals, previously denied the capability of interacting with others, with an ability to create and respond to communications.

By and large, many of the applications of these devices for use by physically handicapped persons are probably personal in nature and that use alone is certainly enough to defend their development. In addition, however, such technology can also turn people who are looked upon as unable to be gainfully employed into those who can become productive workers leading fuller, more enjoyable lives than might otherwise be possible.

THE CULTURALLY, EDUCATIONALLY, AND ECONOMICALLY DISADVANTAGED

The term disadvantaged is generally used to identify those who have cultural, educational, emotional, or economic problems which prevent them from enjoying either a full life or full employment. They exist in a world of despair, deprivation, and little hope.

The crisis our nation faces. It is interesting that, while dollars were invested in what was largely an uncoordinated effort to help the disadvantaged in the past, there is now a real and renewed interest. Sadly this interest may not be generated so much by a desire to help these people as it is to provide for a severe shortage of young workers that is being forecast. In addition, the public cost of providing for our disadvantaged is reaching frightening proportions. Today approximately 22 percent of those under 18 are now

living in poverty. Single-parent families, those hit hardest by poverty, have doubled since 1970. They represent about 26 percent of all families. Teenage pregnancy has increased dramatically and this is, by and large, a certain path to poverty and some form of public support.

Using a single city as an example, as reported in the March 3, 1986, *U.S. News & World Report*, "It is estimated that the 12,804 dropouts from Chicago's public-schools class of 1982 will cost taxpayers about $60 million each year for the next 40 years, or $2.5 billion over their lifetimes." Even forgetting the human suffering that could be avoided, it seems quite obvious that providing additional services to these young people, even in spite of very high cost, would have been a far better economic decision than to let them drift out of school to join the welfare ranks. One cannot help but wonder about both our logic and our commitment.

A recent estimation indicates that, of the 176 million adults in this country, 60 million are functionally illiterate—one adult in three. With conditions continuing as they are it is projected that this number will swell to from 80 to 100 million by the year 2000, just 13 years away. Consider these additional figures from the November 1985 issue of *Better Homes and Gardens:*

- 27 million adult Americans are unable to read.
- 30 million more are functionally illiterate—they read and write so poorly that they cope only marginally.
- In 15 years the functionally illiterate population could be as much as 70 percent of adults.
- Every year 2.3 million functionally illiterate people are added to the ranks.

If we have no compassion for these people as individuals, perhaps we should consider at what point this number will be so large that the productive side of our society can no longer support the cost. School dropouts are a major source for the alarming growth of this group, now sometimes identified as "the under society."

The school dropout. The national dropout rate is escalating at what can only be described as a frightening rate. While exact figures are elusive, it is estimated that secondary schools have a 25 percent dropout rate nationally. Some cities (Los Angeles, 45 percent dropout) are losing almost half of their students. California, as an example of a state, now has an estimated 31 percent dropout rate. The tragedy is that most of these students do not want to leave school.

One of the major problems currently being faced by students is the demand that all students pass rigid academic graduation requirements. Many students cannot meet these requirements and they *know* they will never use the advanced math and science coursework, for example. In addition, the increased academic requirements leave inadequate time in the school schedule for the vocational course which many of these students want and in which they are able to succeed. They feel, quite justifiably, that they are being forced to drop out by a school system and a society that cares little about their needs and goals.

Establishing high academic standards so that students will be forced to

"stretch" their abilities is a cruel hoax. Increasing standards does work for those students who are already motivated and who already excel. But it simply puts additional barriers in the path of the disadvantaged student. The movement to academic excellence has proven one point: it is an excellent way to swell this country's pool of dropout students. If this grand experiment is not modified soon, this country will pay a high and severe cost. The major factor in retaining students in school is that they be motivated to remain. This motivation can come when there are meaningful instructional programs with special opportunities and procedures for those who have learning disabilities. Academic *and* vocational education *can* coexist. They did for over 100 years. It is time to focus on *all* of the students as we have always claimed we do.

The millions of young people who answer to the description of being disadvantaged are finally being called a "time bomb" that will ultimately explode. The spread between the haves and the have-nots is broadening. Some disadvantaged families are now in their fourth or fifth generation of living on the public dole. For many, the "system" does not work. It never has, and tragically but perhaps accurately, they feel that it never will. We know the solution is not welfare. The solution is in self dignity and jobs—jobs based on vocational programs that must be a part of every public secondary school in the country.

The number of young people who are alienated from society for one reason or another is increasing, and at the same time, projections on the number of qualified young people available for the future labor pool is decreasing. The concern of business to have an adequate supply of young workers to fill developing jobs may provide the political pressure needed to ensure that our large disadvantaged student population receives meaningful and effective instruction in basic and vocational skills.

USE OF TECHNOLOGY THAT IS "ON THE SHELF"

The term "on the shelf" generally means a product that has recently been developed; early production models are on the shelf, available for sale and use. In this case, however, we need to look at equipment that is and has been on the shelf in our schools for years, virtually unused. It is surprisingly easy to abandon useful equipment and gadgetry when something new comes along. This is certainly true with instructional equipment. When a large high school is closed one hears what almost amounts to horror stories as hundreds of pieces of useful equipment are discovered stored in closets and lockers, abandoned and unused for years.

As we think of the use of technology to assist special needs students (and primarily the disadvantaged), we need to rethink their particular needs and the type of instructional environment where they are most comfortable and most likely to succeed. They like a protected environment where mistakes can be made privately. They like to know what the objectives are so they can measure their progress on their own. They enjoy the confirmation that comes from *knowing* they are learning and succeeding. They enjoy controlling

the speed of instruction for, in many cases, they can learn new concepts if they are allotted the extra time they require. They like changes of pace, easily brought about by introducing them to new systems of teaching and learning. Many of the factors that add assurance that these students will learn are provided through the use of equipment that is already in most buildings, though much of it may have been unused for years.

The cassette tape player. There must be thousands and thousands of cassette tape machines housed in classroom lockers and closets around the country. They can be brought out, brushed off, tested, and put back into service as learning tools. There are hundreds of commercially prepared lessons covering language skills, word processing, math, shorthand dictation, telephone procedures, job descriptions, human relations, marketing concepts, and many other topics. In addition to the commercial materials that are available, it is easy to create lessons locally.

Teachers, noting special needs which students have, can dictate lessons for classroom use—spelling lessons, for example. Some teachers even invite advanced students or members of business education clubs to do the dictating. These students feel honored to be asked to help, and they enjoy the experience. In one community a teacher called business persons and developed a list of cooperative companies that agreed to have office employees within their firms describe their jobs on cassette tapes: accounting, secretarial, file clerk, stenographer, receptionist, and so on. These tapes covered the type of work that was done, salaries, advancement opportunities, and employability skills such as punctuality, integrity, and so on. In one city a large Kiwanis club, as a public service, produced tapes describing dozens of occupations and made them available to schools.

Many teachers feel that they dare not sign out cassette players and taped lessons for home use. The fear is that the equipment will never be returned but will be used by the students for playing cassette music. In reality, the reproduction quality (really the lack of quality) on small cassette players discourages this use. We assign students textbooks that cost from $15 to $20 and yet are reluctant to check out cassette players that cost about the same amount. Many students need the extra time that home study can provide and taped lessons are reasonably painless. While the classroom tape player certainly is not on the "cutting edge" of technology, its use can provide rich, meaningful instruction, delivered on an individualized basis and in locations remote from the classroom. This resource could and should be used to expand learning opportunities for disadvantaged students.

Slide projector. The slide projector, once a frequently used teaching device, is generally not used to full advantage today. Like the tape player, there are hundreds of meaningful slide/sound programs available on the commercial market. The equipment is easy to run and could and should be used for both individual and small group instruction to meet special needs of disadvantaged students. With today's inexpensive 35mm cameras, teachers (or even student committees) can take their own colored slides. When field trips to businesses are not practical or possible, the trip can be photographed on slides and the

photo version of the field trip, while admittedly not as enriching, brought to the classroom.

The movie projector. One factor is obvious about most disadvantaged students: they are culturally deprived. Many of them have never been to important and available cultural activities that exist only a few miles from their homes, let alone those at a distance. There are thousands of worthwhile 16mm films available. Yet, for a variety of reasons, too few teachers use this important, available resource. Some teachers, to encourage attendance, appropriate classroom behavior, and other positive school attributes, have successfully used film as a reward, an incentive. Each week, in selected classes, a class period is devoted to film related to the course content. Follow-up discussion and quick quizzes over the film assure attention to the contents.

ON THE CUTTING EDGE OF TECHNOLOGY

The video camera. With the availability of classroom television sets and videotape players in schools it is a short step to preparing and showing videotapes within the classroom. The subjects can include filming mock interviews, simulations on customer relations, correct operation of various types of business equipment by students in the class, and even field trips to business and industry. Many stores that sell video cameras also rent them at reasonable rates. The videotape itself is relatively inexpensive. A group of responsible, creative students (and many disadvantaged students *are* responsible and creative) with teacher guidance can plan and tape exciting video program segments.

Interactive video. One of the most fascinating technological developments on the education scene today is interactive video. It is not inexpensive, but it promises to be a powerful instructional tool. This media consists of a microcomputer and a videotape (or video disk) player coupled together. The instructional packages are developed by a special authoring system which permits the instructional program to move back and forth between the computer and the video system on demand. Instruction is delivered on the video screen in color.

The advantage of video disk over videotape is that search time is reduced greatly on the video disk. A scene on the video screen—an interview situation, for example—can be used fully. The entire scene might be used as the interview process is described and discussed. A section of the scene might be used later for review or for testing. Individual video frames can also be called up and used as needed to make a special point. Sound—voices from a scene, background music, or directions—is delivered on the audio track of the videotape or disk.

The computer can deliver colorful sequential screens that give directions, background information, test questions, and so on. Outstanding computer graphics are easily generated to cause sections of instruction to pulsate, flicker, or be presented in different colors or with a colored background in order to draw attention to them. Some of the authoring programs permit points on the screen to be "touch" points where, with a touch of the finger, the

program moves to the next computer screen or video segment. Touch points can also be established so students can respond to questions without using the keyboard. This eliminates the requirement that to use these programs a student must have some basic keyboarding ability. One small corner of the screen can be used to superimpose a signer, a person who spells out the oral messages using the hand alphabet for the deaf. This signing, filmed separately, does not detract from the video material, and it does then make the instructional unit available to deaf students.

While all of the colorful and exciting film, printing, and graphics permit development of attractive and interesting instructional material, the key to the system is interaction—the fact that students respond to instruction and the program leads them, step by step, through an entire learning process.

The primary and most significant feature of this interaction is the branching that is available. A student may respond to a question that follows instruction in a number of ways, giving the right answer or any one of several wrong answers. The program is designed so that *each response* brings about appropriate but different instruction. In other words, individualized remediation is immediately available to each student who gives an incorrect response. The student who gives the correct answer is simply routed on to the next instructional segment. Those who give incorrect responses are routed to a subroutine that deals with the specific problem that each wrong response indicates.

Error patterns. Design of the instructional program, as just noted, requires that the curriculum sequence be developed by a person who is experienced in teaching the specific topic at hand. If the program is to branch to handle wrong answers, the curriculum designer must know, at least in general terms, what those wrong answers might be. The next step, of course, is to design a remedial segment of instruction that will illustrate and explain to the student how the error was made and, further, how to correct it when the problem is encountered in the future. When students add whole numbers, for example, research indicates the kinds of errors they will tend to make. Based on this information, wrong answers can be anticipated, and these wrong answers trigger an automatic branching which takes the student to the specific remedial segment of the interactive program that he or she needs. Right answers would automatically route the subject on to new math problems and exercises, while wrong answers would route them to the appropriate remedial segments of the program. Students who are still unable to comprehend the theory after several remediation subroutines are routed to their instructor for assistance.

Incidentally, the branching capability of interactive video simulates, as nearly as modern equipment can accomplish the task, the same instructional process that a teacher would use when working one-on-one with a student.

The microcomputer. There seems to be no end in sight to the power and versatility of the microcomputer, and prices continue to drop as dozens of new and exciting features are added. Indeed it is difficult to keep up with equipment and software announcements. All of this portends busy but exciting times ahead for the business teacher.

The microcomputer has already been used very successfully in a number of ways with the disadvantaged student. Perhaps one of the most significant applications has been with simple word processing programs. Disadvantaged students, seldom interested in writing, find that the fascination of the machine and its forgiving capability encourages writing. They are able to create written material that, in spite of many corrections and movement of blocks of text, comes out in printed form letter perfect. Producing such material, regardless of the time required, was virtually impossible for these students prior to the microprocessor. Teachers report that less able students *ask* if they can do additional written assignments on the micro. As one learns to write by writing, the microcomputer is being used very successfully to develop and improve basic writing skills.

Some educators criticize the use of the microprocessor as, in their words, an electronic flash card. But those who make such comments have not seen the enthusiasm and motivation that disadvantaged students display when they interact with the computer in working through well-designed drill-and-practice materials. There are hundreds of programs, some of them still in somewhat primitive form, where students can drill, practice, and learn basic skills such as math, word usage, spelling, reading, punctuation, capitalization, decision making, and on through a long list of topics.

One major advantage of the computer is that students can, even at high school level, progress though third grade math drill if it is needed, and only their computer knows at what level they are working. They do not want other students to know how far they are behind in basic skills. With the many different kinds of educational deficiencies that exist in a senior high school business course, it is impossible for a teacher to deliver individualized attention to each student on the wide list of needs that exist. But the computer can do this effectively, efficiently, and painlessly.

Less able students like to do drill and practice on the computer because they set their own learning pace. Often they can also set their own learning level. Many of the skill development programs let students select a level of difficulty from a half dozen available levels. Because they feel insecure, they most often select the lowest level when they begin such a program. Then, as they develop background and ability, they move on to higher levels. These are *student* decisions. Disadvantaged students want to improve their abilities and to stretch their accomplishments just as other students do. But they also want security from failure and from public embarrassment. The microcomputer with good, solid skill development programs provides a means to successful learning that is very attractive to the student.

Computer instruction is individualized. So is criticism. There seems to be no problem when the computer tells a student to do a drill over or that a score is too low. Frequently when a teacher delivers such reprimands, students react very negatively. This is not the case with the computer. Criticism is impersonal and it is private.

Many of the newer drill-and-practice programs on basic skills are vastly improved over earlier versions. Graphics are a delight. Often there is a sense of friendly competition as the student seems to be "competing" with the

computer. Scores are usually accumulated automatically; students know how they are doing. There is frequently encouragement when a student gets correct responses or progresses to advanced lessons.

Some teachers have discovered very creative individuals within the group of students that are classified as disadvantaged learners. With teacher encouragement some students, using text material, learn BASIC programming on their own. They begin to program, and some of them reprogram defective sections of public domain software materials. Others have an artistic flair and develop surprisingly sophisticated and pleasing graphic designs. Such discovery of the special talents of students who have been categorized as less able should again remind us that many who are disadvantaged in one area, basic skills for example, may have significant creative ability in other areas.

Teacher after teacher reports that disadvantaged students want to come in before school, after school, during lunch or library periods in order to work at the computer. Others report that attendance shows an overnight, sustained improvement when students have access to computers and directions on how to complete meaningful assignments. Skill in operating the computer is a status symbol with the peer group. The microprocessor is a motivator. It is a forgiving teacher. It is a magic carpet for learning. It is a friend.

THE BOTTOM LINE

Teaching is, in its entirety, applied technology. True, we have many machines today that are of a high-tech nature. They enhance instruction. They enrich lessons and learning. They motivate. They can transport students across the city and across the world.

And we know from bitter and sad experience why some of the machines and proven instructional procedures are not used, or not used enough. We do not order free film because often the projector is tied up or broken. We know from experience that we will generally have to pay from our own pockets the postage for return of the film. If there is a central film library it is the classroom teacher who must preview the film, schedule it, show it, and see to it that it is returned on time.

We know why we take too few field trips. It is difficult to schedule buses. Arranging with a business for a class visit is not always easy. Getting a colleague to go along on the bus as an additional monitor is often not easy to accomplish.

We know why the tape players and sound/slide machines are not fully used. We know that teachers, particularly of the disadvantaged, are frequently on a survival routine. There is not enough time to do all of the things that one might do to provide the best learning opportunities for these students. So teachers do the best they can. We know from experience that smaller classes and the use of teacher aides to handle many of the routine instructional chores improve instruction for the disadvantaged. Certainly a major improvement to instruction would be providing the teachers the time to do the job they know how to do and want to do.

But the most important technology of all is for teachers to communicate the care and concern that they have for each student. Of all the problems of disadvantaged students the most hurtful is the knowledge, proven time and time again, that they are deficient—defective in some way. The first step to improvement is to gain the feeling of self-worth. That very frequently comes, if it comes at all, from seed sown by a classroom teacher. All of the equipment and sophisticated learning systems in the world are of little value until these students begin to feel that they are moving ahead with a real chance for success in school followed by full economic citizenship after they complete school.

We must look at every class of the so-called disadvantaged, regardless of how disadvantaged they might be, with the knowledge that forces outside their control put them where they are. It will take other outside forces, positive ones, perhaps even costly ones, to bring them back to the mainstream of education. We must believe it can be done and that it is important to do. We must remember too that the oft quoted prophesy is true: what we believe these students are, they will be. And finally, we must remember that within each classroom every student is a person of great potential worth. They deserve the best that the schools can offer.

CHAPTER 10

Selecting and Utilizing Hardware and Software for the Classroom

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The selection of computing equipment and supporting software is an important responsibility for any business department. Business educators will live with the effects of these decisions for several years. While technological and software enhancements are announced regularly, the high cost of these acquisitions means that yesterday's purchase will need to serve an instructional function even when the software and computers are no longer on the "cutting edge" of what is possible in business offices.

The fundamental question to answer before selecting any software or hardware is what students are to be taught: What are the goals, the expected outcomes of the instructional program? All software selections hinge on this answer; all hardware decisions are dependent upon the software decisions. Choosing hardware and then looking for compatible software is a common mistake in both schools and businesses. Some schools make purchases recommended by other schools or businesses or because of a bargain price, only to discover later that the desired software runs on another make of computer or does not support the acquired printer.

This chapter will summarize the main instructional functions to be served by computing equipment in the business department, suggest guidelines for evaluating software, discuss the computing equipment options that would support the chosen software, and provide guidelines for making the final hardware selection.

BUSINESS INSTRUCTIONAL COMPUTING APPLICATIONS

Business teachers perform three major instructional activities that potentially involve major computer use: teaching business microcomputer applications to students, using the computer as a tool for teaching business content, and using the computer as a management tool for their own teaching preparation and organization of materials.

Teaching business microcomputer applications. Business education is distinctive in the education arena for having responsibility for preparing students for office employment positions in which they will use microcomputers. The most common business uses of microcomputers are in the following areas: word processing, accounting, spreadsheets, file managers or databases, business graphics, programming in BASIC or Pascal, electronic mail, and telecommunications. Each of these could receive separate exami-

nation and have individual guidelines developed for evaluating business applications software; however, the guidelines presented below are more general and apply to these applications as a whole. A comprehensive business information processing program in a school should provide introduction to all of these.

Another growing area of microcomputer use is in project management and scheduling. "Desktop organizers" and "desktop publishing" are two additional applications which are gaining in popularity. A desktop organizer is a program which runs "in the background" on a computer and allows quick note-taking, scheduling, and calculating actions; these programs run on several computers. Desktop publishing allows business offices, with the appropriate hardware and software, to produce printed documents of near-typeset quality.

A situation to be faced by business departments as they consider teaching any of these business applications, but particularly those in the first listing of very common use, is that many other areas of the school curriculum are also teaching these applications as "problem-solving tools." Students are likely to arrive at business departments at both the secondary and postsecondary levels with prior exposure to word processing, databases, spreadsheets, graphics, telecommunications, and programming. The following questions or issues need to be addressed as software (and hardware) are selected for use in the business department:

1. How can the business department differentiate its software from that used at earlier grade levels and still articulate its program to build on students' prior experiences?
2. Are different computers an appropriate way to differentiate the business program from other curriculum areas?
3. Do students see the business program as a repeat of what they have had before or as providing the opportunity for more advanced uses of microcomputers?
4. What business course prerequisites are necessary in order for students to engage in realistic business applications using microcomputers?
5. How can courses in the business department provide for the increasingly diverse computer-using backgrounds of students?

The answers to these questions will affect the overall software evaluation process.

Teaching business content using computers. A second major instructional computing application is teaching business content by using the computer as a tool to deliver instruction. This commonly takes the form of drill and practice, tutorial, or simulation software. Its use in business classes is currently much less extensive than teaching business applications, but the potential of using the computer to deliver portions of instruction is available to teachers in all subject areas.

Drill software can be used when students have received an introduction to a particular content area and can benefit from the systematic presentation of drill and review problems by the computer. Immediate feedback about the correctness of a student's responses and continual, patient, question

presentation until mastery is attained make computer-based drills worthwhile. The business areas for which software is currently available to provide drills include the following: keyboarding skill development; business math; spelling, grammar, and English style areas; business law; accounting; and indexing and filing.

Simulations are designed for use in subject areas where students have already gained at least introductory background through prior learning activities. The simulation presents students, often working as a team, with a realistic case situation to which they are to provide a solution. The computer plays the role of information processor and reporter of the final outcome. Students must then evaluate their earlier decisions based upon the results. Through the use of the computer, time is compressed and events beyond students' control are simulated to provide a "real world" environment. The business subject areas most often supported by simulations, especially computer-based ones, are currently the following: accounting, economics, business management, and career exploration.

Both drills and simulations have assumed that students have some background in a subject area prior to using the computer as an instructional aid. Computer-based tutorials are intended to provide initial instruction to students in a specific subject area. They present new concepts and rules, involve students in the learning by interactive questioning, and provide feedback to students to let them assess their learning progress. Because this type of program needs to be able to diagnose common misconceptions of students and branch to appropriate explanations, it is considered more difficult to write than drill-and-practice software. The business subject areas in which tutorials are playing some teaching role or could potentially be useful are the following: introductory keyboarding, accounting, business math, business law, English grammar and style, and other office practice topics.

Teacher-management uses of computers. The third major type of instructional computing application is teacher's own use of computers to prepare for their teaching and to organize their teaching materials. The tools which businesses find useful—word processing, spreadsheets, databases, and graphics utilities—are equally useful to teachers in their offices. The latter, graphics utilities, permits the preparation of overhead transparencies and other visual teaching aids. In addition to these, there are computer-based administrative tools designed specifically for the teaching field: grade-book maintenance programs, test generators, worksheet generators, game generators, and test-scoring programs.

GUIDELINES FOR EVALUATING SOFTWARE

Before teachers undertake the software evaluation activity, they need to prioritize their instructional needs. What software categories are to be examined first? Which of the potential teaching areas offer the most options and require review of several possible software packages?

It is likely that teachers will focus first on the business microcomputer applications which they will be teaching. This is a major expectation for

business teachers in any school which has made a commitment to teaching computer technology. Normally, schools do not begin teaching all of the potential business applications at once. The two areas most likely to be taught first are word processing and accounting. The business area most likely to be the first to use the computer to teach content is keyboarding.

After recognizing and implementing instructional decisions in these three major areas, the number of computers available and the organization of existing and new courses affect the breadth of business applications which can be taught. But, before considering curriculum organization, software evaluation could be initiated.

After identifying instructional priorities, or even simultaneously, a committee can be formed to provide organizational focus to the software evaluation activity. Those teachers likely to be most actively involved in teaching computer applications together with a department chairman and a person with technical expertise in using computers (possibly another business teacher) should be part of such a group.

The sources of information likely to be helpful in evaluating software differ for business applications software and instructional software. Software useful as a teacher-management aid may be found in the same sources as either the business applications or instructional software.

Sources of information for locating business applications software. Locating business applications software that may be appropriate for instruction can be done through several sources. General purpose computing periodicals are one of the best sources for getting current information about new releases, learning which software is being used most in business offices, and finding critical reviews of a wide range of software. Frequently these periodicals will devote major portions of an issue to a specific category of software and provide a comprehensive list and comparison of several packages. These magazines include the following: *Personal Computing*, *InfoWorld* (a weekly newspaper), *Business Software*, *Software News*, *Byte*, *Computer Decisions*, *Small Business Systems*, *Administrative Management*, *Words*, *Modern Office Procedures*, *Today's Office*, and several magazines devoted entirely to a particular brand of computer.

In addition to periodicals, software directories are published regularly to catalogue and, in some instances, critically review available business microcomputer software. Some of these also include an "education" section. The books *How To Buy Software* and the *Whole Earth Software Catalog* are of this type. The *Software Digest* is a subscription-based publication for business that includes comprehensive evaluation and rating of major software categories.

Each publication takes a different approach to formatting its evaluations. The general categories of features, performance, documentation, ease of learning, ease of use, support, and overall value are commonly used. Ratings can be assigned to each category and to the overall package, and this overall assessment can be helpful to persons wanting a quick summary of several packages. However, when the application to be selected can be narrowed

to a few top contenders, the complete review describing why judgments have been made is necessary.

Sources of information for locating instructional software. The sources of information for locating educational instructional software and materials to teach business content using computers include two major groups of periodicals. One group is available for instructional computing as a broad field, and these periodicals frequently include critical reviews of software and comprehensive listings of software available for a particular subject area. Some of these include the following: *The Computing Teacher, Electronic Learning, Classroom Computer Learning, AEDS Monitor* and *AEDS Journal, Computers in the Schools, Courseware Report Card,* and *Educational Technology.* In addition, commercial or professional organizations make software directories available specifically for the education field as a whole, such as "The Digest of Software Reviews: Education" and "The 1985 Educational Software Preview" from the International Council for Computers in Education (ICCE).

A second major source of information about business software could be the business education periodicals such as *Business Education Forum, Balance Sheet, Business Education World, Business Exchange, VocEd, Delta Pi Epsilon Journal,* and *NABTE Review.* While instructional computing applications have been the focus of numerous articles, reviews of specific software packages have not been prominent in our own publications.

In addition to periodical literature, at least three national sources exist for obtaining software evaluation data for education as a whole; one is a national clearinghouse for evaluations of software in vocational education. The MicroSIFT project at the Northwest Regional Evaluation Laboratory uses a standard evaluation form to summarize the quality of software based on several criteria. The EPIE Institute also uses a standard form to evaluate software for inclusion in a report available by subscription. Finally, The National Center for Research in Vocational Education has developed a Courseware Evaluation Network for Vocational and Technical Education and uses the form "Courseware Evaluation: Form and Guide for Vocational and Technical Education" to collect evaluations from teachers.

The evaluations of software made available by these organizations may be available in the software section of the RICE database (Resources in Computer Education) and are accessible to subscribers to the Bibliographic Retrieval Services, Inc., Information Utility. The Vocational Education Curriculum Materials (VECM) database, also accessed through BRS, Inc., is a comprehensive, centralized, computerized database of information on curriculum materials including computer courseware reports.

Evaluating software. When any of the above sources of information are used to locate software and associated critical reviews, two cautions should be exercised. The quality of information is affected by the level of evaluation carried out. Evaluations can range from brief descriptions of software, the hardware requirements, and intended objectives, to thorough evaluations of the software including student outcomes or experiences as the software is used. Few of the latter are available, although these would permit the best

basis on which to make decisions about expensive packages intended to be used in the curriculum for several years.

Short of obtaining reports of actual student use, the second caution is to know the reviewer. The best information available is a comprehensive description of a package evaluated by a professional user. For business software, these professional users should be business teachers, preferably teachers whose experience and familiarity with research in a teaching area give them credibility as judges of software quality.

When published software reviews are not available, committees of business teachers will need to do their own evaluations. This implies that they can obtain software from vendors for review purposes. Information about whether review is possible is available in software catalogues; and review opportunity, even of an abridged package designed for this purpose, is necessary to make an informed purchase.

Several forms have been developed for reviewing instructional software and business applications software. The MicroSIFT, EPIE, and Vocational Education forms were mentioned previously. Also available from the International Council for Computers in Education is "The Evaluator's Guide for Microcomputer-Based Instructional Packages." Several states have developed instruments for statewide software evaluation efforts, and some subject matter fields such as science and math have developed forms specific to their needs. Because these forms are readily available, their content will not be repeated here. Particularly in the business applications area, forms may be most useful when they focus on a specific type of application, such as word processing or spreadsheets, and include criteria which recognize the capabilities and functions unique to the category.

Rather than including a checklist, the following guidelines are suggested, first for business applications software and then for instructional software.

EVALUATING BUSINESS APPLICATIONS SOFTWARE. Evaluation of specific business applications packages can start with identification of the packages most used in business offices. When students are being prepared for employment, this match between in-school instruction and office use is an important consideration. However, even within a given community several packages may be used to meet different office requirements, and choices must be made for instruction. The following questions are suggested as guides in selecting these packages:

1. What are the fundamental concepts within a business application that students need to know? The software purchased should contain these functions and be a good representative of what is actually used in business.
2. Should more than one package of a given application be taught? Experience in school with the negative transfer of using different software (and computers) could be helpful to students who will be faced with different software to learn when they are on the job. Student background and the amount of instructional time available will affect this decision, as will the cost of supporting several versions of the same application.
3. What background do students already have with a given application? How can the business department build on this knowledge and present a program

to students that appears (and is) different from what they have already learned?

4. How much instructional time is available? Business applications can be purchased that are too complex to be taught within the time available, and less functional and less expensive packages may serve the purpose as well.
5. Will enough computers be available to support the amount of instructional time needed to teach given business applications? Limited numbers of computers mean students may need to work in pairs or teams; or, if computers cannot be shared, students may have short computer sessions. If a laboratory of computers is not available, some applications will not be taught. For example, computers cannot easily be shared for students to learn word processing any more than typewriters can be shared to learn typewriting.
6. What is the quality of the users manual for the potential software purchase? Few users manuals can stand alone for school instruction, but the explanations in the manual of the software functions should be clear to students. Teachers should not have to rewrite the users manual.
7. What instructional materials are available to support the users manual? Generally, additional application exercises are necessary to provide students with the practice that most users manuals do not include.
8. If instructional materials can be purchased, are they software specific, or can they be used with several brands of the same application? The latter would be preferred if several brands of an application are to be used.
9. What does the software cost? This includes more than the educational cost of a single package. Are quantity discounts or site licenses available? Will the software run on a network if one is available or being considered? What is the cost of backup copies and upgrades to new versions? Does the software require special hardware, such as expanded memory, graphics capability, or a restricted selection of printers?
10. What is the cost of training teachers to use the package? Can training be obtained at local universities or through local workshops? Will the school support inservice training? Will teachers need to learn "on their own," and, if so, are the users manuals adequate for this experience?

EVALUATING TEACHER-MANAGEMENT SOFTWARE. The questions to be answered about teacher-management tools, some of which may also be used by students, include the following:

1. Is compatibility of software desirable within a department or school so that teachers can share data? The issue here is whether individual teachers should choose their own applications software or whether economies of cost and data sharing are to be encouraged. Departments can frequently agree to standardize on group-selected software because of cost, but sharing beyond a department is an issue involving cooperation of more people.
2. Should teachers use the same business applications (word processors, spreadsheets, databases) that they are teaching? Learning for teachers would certainly be easier—if the student packages are adequate to teachers' needs.
3. Is the software sufficiently flexible to meet the organizational preferences of different teachers? If software for grade-book maintenance or test generation, for example, is to be useful, it should support the practices which teachers prefer to use, not force a less useful restructuring.
4. Does the management utility really save time or produce a better result? While

all software requires a learning period that initially makes work less efficient than the familiar manual method, teacher-management tools should eventually save teachers time. If this is not likely to be the case, the utilities will not be used.

EVALUATING INSTRUCTIONAL SOFTWARE. The evaluation of instructional software to teach business content may be facilitated by the following guidelines:

1. What are the priority areas for providing supplementary or remedial instruction in business subjects? At present most multipurpose classrooms in most schools do not have sufficient computers available to permit whole-class instruction using computers for major portions of a course. While this may change in the future, the need to share computers means that students must work in teams or rotate to a turn on the computer. The exception to this situation may be the keyboarding area where laboratories of computers need to be used to teach this subject.
2. Does the content used in the drill, tutorial, or simulation complement the instructional materials already used in the course? A match is needed for the material to be of interest to students—and useful for reaching course objectives!
3. Is sound instructional methodology used in the presentation of the material? Do drills provide systematic, meaningful review, something more than random generation of questions or drills? Do tutorials approximate a human teacher as much as reasonably possible in sequencing the instruction and anticipating misconceptions and sources of errors? Do simulations capture essential elements of reality so that students do have to learn new "rules" to outguess the simulation?

These questions can best be answered by business teachers familiar with their content, familiar with research findings about teaching effectiveness, and experienced in teaching given groups of students. Beyond these fundamental questions about content, the items in the software evaluation checklists that are concerned with the quality of the computer-based design can be used. The following surface and design characteristics are frequently part of the available evaluation checklists for instructional software:

1. Language and grammar, such as reading level, cultural bias, technical terms, jargon, spelling, punctuation, and spacing conventions.
2. Surface features, such as amount of information presented, directions, learner control, animation, graphics, displays, overwriting, scrolling, input method, reference to other materials, and manner of ending.
3. Use of questions and menus with regard to their clarity, ability to leave a question unanswered, and the format and quality of feedback.
4. Invisible functions, such as recordkeeping, accessibility of the records, system response to too many records, and ability to restart the program from any point.
5. Off-line materials, such as the users manual information about program content and operation, use of scoresheets, and need for other resources.

BUSINESS COMPUTING HARDWARE OPTIONS

The identification of the business applications and instructional software to use will have a major effect on the hardware which is chosen: the hardware must run the selected software. However, sometimes the same software will run (not the same disk, though) on different computers. This gives the

hardware selection committee some leeway in choosing the specific model. The following hardware features need to be considered in making the final decision.

Input options. Several devices exist for getting data into a computer for analysis, but the keyboard is the main source for data entry. This keyboard should match the standard typewriting keyboard as closely as possible to permit positive transfer from students' typewriting instruction and positive transfer to the widest range of business office keyboards. The keys should be in standard locations and should be full-size keys that permit the display of both upper- and lowercase letters. Normal shift key and tab operations should be possible. Consideration should be given to whether the presence of a 10-key pad on the keyboard is essential.

Most business software makes use of special function keys to control program operation. Since their use varies from program to program and the location of these keys is different on different computers, the main concept for students to understand is the use of such keys. Asking that these function keys be in particular locations could unrealistically restrict hardware choices.

Special input devices are available on several computers, and more software is making use of "mouse" cursor control, joysticks, game paddles, or graphics pads for drawing, and even some limited voice input. If the software chosen can use these, or requires any, then they will be considered for purchase.

Computer processing capability. Different brands of computers operate differently internally. Some run faster, some come with graphics, some have color; others can possess these attributes for an extra price. The operating systems differ. This means that they cannot run software sold for another machine. Most computers permit the use of several different programming languages. The languages most likely to be considered for instruction in the business area—BASIC, Pascal, FORTRAN, and COBOL—will run on most microcomputers. Except for the BASIC language, however, each language is an additional cost.

Storage capabilities. The internal and external storage capabilities of the various brands of computers differ markedly. Today, 64K of internal memory (64 thousand bytes or characters of random access memory, RAM) is the minimum which should be accepted. It is sufficient for most instructional applications, but not sufficient for many business applications. These may require a minimum of 128K, and again, depending upon the software, 320K might be necessary. The major computer brands will permit RAM memory expansion, even up to a million bytes of internal memory, but for an added cost.

External memory also varies, especially when the option of hard disk drives is added to the standard floppy disk. Two disk drives are frequently necessary for business applications: one drive for the program and the second for a data disk. Instructional applications (teaching content) frequently require only one disk drive.

Business offices frequently use hard disk drives to store data and programs at a single computer station and perhaps also on networks of several computers. However, the primary use of hard disks in schools is as part of a

network. The purpose of a network in a school computer lab is to permit the sharing of programs and printers. When programs can be stored on a hard disk and accessed from this source by several computer stations, the clerical task of distributing and collecting disks is minimized. Students might even store their data on the hard disk, or they may each keep a personal data disk. In any event, before a network is acquired, the software and hardware selection committees need to know if the software desired will run on the network.

Display of output. All computers permit a selection of monitors or CRT's on which to display output. For business applications, it is particularly important to have high-quality text display for word processing, spreadsheet, database, and accounting applications. Instructional applications (teaching content), however, frequently require the capability of displaying color graphics. Graphics display capability is also necessary for teaching business graphics applications. If graphics and text are desired on the same monitor, it is important to choose a monitor that displays both well.

The monitor chosen should not only display text well, but it should display 80 columns of text clearly. The choice of black and white, green, blue, or amber display on a monochromatic (text) screen is a personal choice. Research has supported both green and amber as "easy on the eyes."

The color screen chosen can vary in color resolution. Composite color display is most common. RGB color is of better quality, but both the monitor and the hardware adapter for the computer which are necessary to permit this higher level of color display will add costs. Some high-quality graphic screens do not have color, adding another choice dimension. If many computers are being acquired for different teaching purposes, it may be possible to have a variety of monitors to match the business application or teaching need.

In addition to monitors at each computer station, computer labs or multipurpose classrooms need larger monitors for demonstration purposes. If large monitors are used, they should be big enough for all students to see, or several can be "daisy-chained" and placed around the room. Alternatively, if students have computers, all students' screens could be linked to a teacher station with each student having a personal view of the teacher's demonstration on the student's own screen. Different brands of wiring systems are available to permit group instruction in a computer lab.

Printed output. Business applications are more in need of high quality printers than many other instructional applications: word processing, accounting, and business graphics make heavy printing demands. The choices of printers today range from dot-matrix, to letter-quality, to laser (almost offset-quality) printers. Some dot-matrix printers approach the letter-quality printing desired for word processing.

This does not necessarily imply, however, that letter-quality printers are necessary for word processing, even though these are the norm in business offices. Until prices of the two types of printers are truly comparable, instructional applications of word processing will find dot-matrix printers satisfactory; a single representative letter-quality printer might be used in

a capstone model office or advanced secretarial course. A letter-quality printer is also desirable for faculty office use. Perhaps, in some schools, one letter-quality printer could serve both needs. Some letter-quality printers do approach the low price of dot-matrix printers, but the trade-off is frequently a marked slowdown in printing speed.

Business graphics requires a dot-matrix printer capable of printing graphics. This also implies a printer interface card with printing capability. Alternatively, software can be purchased to "drive" graphic printers when the interface card lacks this feature. Selection of the "right" printer will permit high-quality, fast output for most business applications from word processing through accounting to business graphics. Eventually, the programmable laser printer may be the choice, but its current cost is likely to reserve it for special graphic or desktop printing applications.

The cost of printers and their relatively infrequent use make it desirable for students to share this output device. This can easily be done through the use of switch boxes to allow several computers to be connected to a printer and the specific computer chosen by the turn of a dial. Alternatively, a network can be used to control printer use by several computers. Ratios as high as five computers to one printer have been workable; a ratio of three computers to one printer is common. The trade-off for the luxury of a lower ratio may be less software!

Another kind of printed output of special interest for business graphics is the plotter, although its less common use in business departments indicates it is not a high-priority device. A plotter can produce graphic output in color, although printers which produce color are becoming more readily available. The advantage of a plotter to a business department, however, in addition to enhancing the teaching of business graphics, is to permit teachers to produce color transparencies directly from the computer.

Special output devices. Two output devices becoming more common for instructional computing (teaching content) are voice output and the use of videotape or videodisk display. Computers differ in their ability to produce voice output; but for special groups of students, this could be a useful feedback aid. Videotape or videodisk adds the potential of both sound and motion as an adjunct to delivering instruction. The cost of producing instructional materials in this format currently limits its use in the schools; industrial applications are more common. In the business area, instructional software in secondary-level economics has been supplemented by videodisk display.

Telecommunications hardware. If telecommunications capabilities are to be used by students or teachers, at least one modem, appropriate interface card in the computer, and associated communications software are necessary. Modems and communications software currently can transmit data across telephone lines at three common speeds: 300, 1200, or 2400 baud. The first rate is quite low; and since most public information utilities support both 300 and 1200 baud, the latter is preferred. While the fastest rate of 2400 baud is likely to become the business standard, this has not happened yet.

GUIDELINES FOR EVALUATING HARDWARE

The previous comments have implied the needs of business instruction for certain types of hardware. Most equipment acquisitions by schools are by purchase, rather than rent or lease options. Additional comments follow related first to the question of selecting hardware for teaching business applications and then to the question of selecting hardware for teaching business content.

Hardware for teaching business applications. The following summarize some of the characteristics of teaching business microcomputer applications and the implications as hardware purchasing decisions are made.

1. NUMBER OF COMPUTERS. The intensive use of computers required to learn and then to use business microcomputer applications suggests the need for a laboratory setting and the number of computers necessary to give all students (or pairs of students) simultaneous access to a machine. Fewer computers and the use of rotation plans imply that fewer applications will be taught or that only brief introduction to several applications will be possible.
2. SHARING COMPUTERS. Word processing instruction requires a ratio of one computer per student; teaching other business applications, including programming, can benefit from students working in pairs.
3. PRINTERS. Dot-matrix printers are satisfactory for most business instructional applications and are necessary for business graphics. Letter-quality printers are the office word processing norm; and, therefore, students can benefit from seeing how letter-quality printers differ from dox-matrix printers.
4. PRINTERS FOR TEACHERS. Teachers, especially, need access to letter-quality printers for their own office work. Teachers also may find a plotter useful for the production of color transparencies; the device is also useful to teach business graphics.
5. DISK DRIVES. Business computer applications generally require two disk drives, unless a network is being used. In this case, one disk drive may be satisfactory. Networks do not generally eliminate the need for disk drives at students' stations. Instructional requirements may not require a hard disk at each student's station. However, because business workstations frequently have individual hard disk access, students need to know how this device differs from floppy disks of varying sizes. Representative workstations with advanced capabilities may be justified if software decisions support the need.

Hardware for teaching business content. Instructional computing that is designed to deliver instruction in a business content area may have the following characteristics and hardware implications:

1. COLOR AND GRAPHICS. Instructional software frequently incorporates color and graphics to enhance the teaching; hardware needs to support these features.
2. SPECIAL INPUT DEVICES. Some instructional software requires the use of special input devices, such as voice or a pointing device (mouse, joystick, game paddle, or graphics pad). If this software is selected, the hardware decision follows.
3. PRINTERS. Printed output is not often required by students when using instructional software, except in the area of keyboarding instruction. In the latter, a computer lab with printers for every three to five computers is necessary.

4. SPECIAL OUTPUT DEVICES. Special output devices such as videodisk or videotape are currently not known to be supported by a wide selection of instructional software packages for secondary or postsecondary business subjects. These await development.
5. RECORDKEEPING. Instructional software frequently incorporates student record storing capabilities, but this generally does not require an extra disk drive.

While software selection is the starting point for hardware decision making, a specific package of either a business application or instructional software is likely to allow some flexibility. The same software may have versions for several computers, may work with one or two disk drives (though more tediously with one), and may support several printers. There may be versions which will run on a network.

The challenge for the selection committee is to find that common denominator of hardware that offers the potential of continuing to be supported by quality software development.

Dilemma of choosing more than one computer brand. The following are some of the possible advantages of choosing to teach using more than one brand of computer:

1. One computer may be better suited to some purposes than another.
2. Students may benefit from learning different systems, an eventual job reality of dealing with the negative transfer of commands from one computer to another.
3. If a mix of machines is being used, new technology may be added without replacing all machines; it is just another choice.
4. Taking advantage of special prices (low bids, gifts, when they meet instructional needs) may encourage a mix of equipment brands (printers as well as computers).
5. A choice of equipment may be attractive to students who want to learn a different computer from one they have used in a prior course.

The disadvantages of having several brands of computers and/or printers available for instruction may include the following:

1. Added costs may arise from having to provide parallel sets of software, instructional materials, supplies, and maintenance contracts for the different machines.
2. Dissatisfaction with the potential confusion and the added burden of learning to operate different types of equipment may make finding and retaining teachers more difficult.
3. Students may find switching to different computers and/or printers confusing if they have not had the time to learn one system well.
4. Backup equipment for machine malfunction will not be as readily available as when many similar machines are used.
5. Different models of equipment may not be usable within a common network.

CONCLUSIONS

The costs of both computing software and hardware need to be considered along with the amount of realism inherent in the software selected for instruction. Once a given software package has been selected, it needs to

be purchased for each computer station. This is not unlike purchasing textbooks for each student, but currently much of the desirable computer software costs more than most textbooks. Educational discounts and special licensing arrangement are becoming more common and may alleviate this problem. However, teaching with computers is currently an expensive proposition, but necessary for business departments compelled by the need to provide legitimate (realistic) business career preparation.

An easy answer cannot be provided here about what to buy. Committees of business teachers must make their own decisions, and it is hoped that some of the above guidelines will aid in rationalizing the process.

CHAPTER 11

Economic Awareness for a Changing World

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Economic illiteracy continues to be of concern to business leaders, parents, and educational policymakers. The much cited *A Nation at Risk: The Imperative for Educational Reform* report by the National Commission on Excellence in Education in 1983 stated that precollege economics is one of a number of subjects that should be targeted for reform and excellence from the standpoint of teaching and learning. This increased concern with the importance of economics in the precollege curriculum provides business educators with additional opportunities and responsibilities to contribute to students' economics reasoning skills. There continues to be little doubt that the national level of adult economic literacy is at best seriously lacking. The *1985 Hearst Corporation National Survey* found significant percentages of adults unable to correctly identify current and correct information regarding national employment trends, the federal budget, basic economic institutions, and current economic information regarding our nation's economic progress. This situation exists as economics subject matter becomes more complex.

Business educators are continuing to commit themselves to the development of economics competencies and skills. The most recent business education publication regarding the comprehensive evaluation of business education programs for quality determination is entitled *Standards for Excellence in Business Education*. Published by the National Business Education Association in 1985 in conjunction with the U.S. Department of Education, it contains four curriculum standards regarding economic concepts and skills. These standards include basic business understanding, decision making, business and economic literacy, and entrepreneurship. Business education economics content and teaching strategies should be changing and progressing in order to meet these quality standards.

This chapter will provide possible answers to the following two questions regarding these important changes. What new teaching strategies are available to accommodate the increasing complexity of economics content facing teachers of business education courses? What do recent reports and studies provide business educators concerned with continually upgrading economics education evaluation and planning activities?

TEACHING STRATEGIES UPDATE: FUNDAMENTAL ECONOMIC CONCEPTS

The past five years have seen an unprecedented amount of quality materials for developing and implementing economics teaching/learning strategies for

use by business educators. This section will review these materials in terms of the economic concepts listed in the 1985 Joint Council on Economic Education publication *A Framework for Teaching Basic Concepts* from the Master Curriculum Guide in Economics series. Also, specific economic concepts will be examined in the context of appropriate business education courses. The fundamental economic concepts from the *Framework* are most appropriate for all business education courses with an economics component. These concepts focus upon the problems that arise because businesses, consumers, and governments do not have all the economic resources they want or need. The first basic economic concept is that of *scarcity* which is defined as an imbalance between relatively unlimited wants and relatively limited resources for satisfying those wants. Introduction to business and basic business are excellent courses for including *scarcity*. This is a foundation concept which can be reviewed or introduced at a more complex level in business principles, business law, consumer education, or economics classes.

The 1985 Joint Council publication entitled *Teaching Strategies: High School Economics Courses* is a new resource for teaching techniques involving the specific economic concepts in the *Framework*. Lesson 1, "Scarcity, Choices, and Decisions," places students in the role of community leaders deciding upon a town budget. Students must consider either a tax increase or a budget cut. Ultimately, students propose a budget within the constraints provided by the mayor and develop a rationale for their proposal. Students soon realize that governments, as well as consumers, are faced with the condition of scarcity.

Give and Take, which consists of twelve 15-minute color television film programs in economics, is an excellent audiovisual resource. The series is available from the state councils for economic education or a local center for economic education. Business educators can determine the nearest location from the Joint Council on Economic Education. Program 1 entitled "You Choose: Scarcity and Personal Decision Making" involves two young women deciding whether to earn money during a summer vacation. This program introduces the decision-making model and involves students in the development and evaluation of various alternatives involving a particular problem. The series includes a teachers guide with appropriate pre- and post-program activities. The teachers guide also includes student handouts which are classroom-ready for duplication.

The second economic concept under the category of fundamental economic concepts is *opportunity cost and trade-offs*. This is probably one of the more important concepts in this category and is based upon the economic concept of scarcity. Opportunity cost is the forgone benefit for the next best choice. Upon mastering this concept students realize that all situations involving a scarcity of resources involve selecting one alternative over another. Students should also be able to identify the specific opportunity costs of a given alternative. Trade-offs involve receiving less of one product or service to obtain more of another. Businesses and governments, as well as consumers, face the need to determine opportunity costs and trade-offs for more effective decision-making practices. The 1985 Joint Council publication *Teaching*

Strategies: Consumer Economics is another new resource for business educators. Lesson 1-1, "Wheels or No Wheels," demonstrates the concepts of scarcity, opportunity costs, and trade-offs. This instructional activity involves students in the decision-making process regarding personal transportation and the application of personal and social values. Students also evaluate various transportation modes considering safety, convenience, cost, and time factors. A particularly important aspect of this activity is the completion of a decision-making grid (Handout 1-1B) in analyzing decisions regarding transportation. The *Give and Take* program entitled "We Choose: Scarcity and Social Decision Making" provides a social context to the concept of opportunity cost and trade-offs. In the program, high school students are to decide upon a safe alternative to allowing all students to leave campus for lunch. Students, as a group, must make a decision and consider the various alternatives and related opportunity costs. This program also involves students in the completion of a decision-making grid.

Tax Whys: Understanding Taxes, produced by the Joint Council in cooperation with the Internal Revenue Service, consists of six 15-minute videofilm programs and is another excellent teaching tool available from either a local center for economic education or a state council for economic education. Similar in format to *Give and Take,* this series provides business educators with a public sector scenario for a number of the basic economic concepts from the *Framework.* The series is designed to introduce students to the major issues of taxation and has a microeconomic focus. A teachers guide with classroom-ready handouts is part of the series. Program 1, entitled "Taxes Raise Revenue," helps students to understand that taxes raise revenue and transfer resources from private individuals to government. In the program a family is faced with the problem of a washed-out county bridge and how to pay for its replacement or repair. Another element of the program involves high school students debating the role of taxes. *Opportunity cost and trade-offs* is an important theme in terms of trade-offs of higher taxes to pay for the repair of the bridge.

The concept *productivity* provides students in business education classes with an opportunity to understand the nature of input markets and the role of human capital development. Productivity is the amount of output produced per unit of input utilized. Students may want to use hours of study time and a test grade as an example of the role of productivity in a student's life. *Consumer Economics* Lesson 4-3 entitled "Increasing Productivity" describes how productivity affects prices and provides students with an opportunity to devise methods of increasing productivity. In this activity, students produce name tags in determining various methods of increasing their productivity. By experimenting with various techniques over a number of different production rounds, students soon learn how to analyze the costs and benefits of increasing productivity. *High School Economics* Lesson 4, "Getting More or Using Less," involves a simulation demonstrating how the use of capital goods and how the division of labor improve productivity. Students also analyze the additional costs incurred when trying to raise productivity and engage in a review of trends in productivity over the past

40 years. *Give and Take* Program 6, "A Key to Productivity," helps students to apply the concepts of human capital and productivity to student career choices. Two young men, Brett and Carl, are faced with decisions involving investments in their own human capital. Each makes a different decision regarding their personal investment in education and training.

The concepts of *economic systems* and *economic institutions and incentives* are also foundation concepts which should be a part of all levels of basic business and consumer courses, both introductory and advanced. *High School Economics* Lesson 2, "Different Means of Organizing an Economy," helps students to understand that all societies must deal with the problems of scarcity. Yet, differences between societies arise when they attempt to answer basic economic questions in different ways and with different objectives. In this lesson students recognize the different approaches used by the Soviet Union and United States economic systems in answering these basic economic questions.

Lesson 3 in *High School Economics*, "The Circular Flow of Economic Activity," deals with the concept of economic incentives and their relationships to the major elements of an economic system. Student Handout 3-1, "Earning a Living," is a simulation in which students play the role of either household or business. As households, students sell human resources, natural resources, and capital goods to businesses. The income households earn from selling these productive resources is used to buy goods and services produced by businesses. The possibility of price changes is an element of the game that players should consider in reaching their decisions. Business buys productive resources and sells household products. The major consideration for business is to sell products for more than the costs of production. In Handout 3-2 students analyze possible flows and exchanges between resource owners and government, business and government, government and resource owners, and government and business. The objective is for students to identify the specific nature of a given flow such as money payments (wages) for productive services or money payments (taxes) for government services.

The economic concept of *exchange, money, and interdependence* provides business educators with a number of opportunities for instruction in the area of payment and savings techniques. Voluntary exchange involves the trading of surpluses by producers, learning that eventually all parties are better off. Direct trading or barter can be an inefficient means of compensation and it may also be inconvenient. Money facilitates exchange and need not have any intrinsic value. *Give and Take* Program 3, "Let's Save: Opportunity Cost," helps students apply the concept of opportunity cost and trade-offs to the saving and spending of money. Three young men, Robert, Ricky, and Paco, are faced with a number of decisions regarding how to save the money they have earned and when and how to spend it. Program 4 of the same series, "Credit Wise: Opportunity Cost," explores the advantages and disadvantages of credit as a means of payment. Teenager Tina makes a number of important mistakes when using her parents' charge card and suffers the appropriate consequences of poor economic decision making on a personal level.

TEACHING STRATEGIES UPDATE: MICROECONOMIC CONCEPTS

The microeconomic group involves those concepts relating to the behavior of individual households, businesses, and markets. The role of prices in allocating output and determining income is an important aspect of these concepts. These concepts should be a substantial component of business principles, consumer economics, and the senior economics classes. They can be a smaller component of introduction to business, consumer education, basic business, and business law classes. The concept of *market and prices* provides students with a knowledge of why buyers and sellers get together. Students in all basic business and consumer classes need to realize the role of prices in transmitting information in the marketplace.

High School Economics Lesson 8, "Markets Allocate Resources," analyzes how markets provide information, how buyers and sellers respond to market changes, and how changes in one market affect other markets. Lesson 5, "A Market in Wheat," is designed to show how a competitive market works. By completing this simulation students can gain a better understanding of how prices are determined. The activity involves dividing the class into equal groups of buyers and sellers. For transactions between buyers and sellers, students are given cards indicating price and quantity limits affecting their negotiations. At the end of the simulation students determine their individual profits and losses from trading, and demand and supply curves are derived from analyzing the transactions. This activity requires a high level of student cooperation and adequate open space in the classroom for the physical movement of buyers and sellers. *Give and Take* Program 9, "Market Prices: Supply and Demand," assists students in understanding how prices influence consumer purchases, incomes, and what and how much is produced. The program, through a number of vignettes, illustrates the far-reaching effects of a change in the price of sugar. *Consumer Economics* 2-1, "Interdependence in the Marketplace," explains how production can involve interdependences between a variety of markets and industries. The student handouts for the lesson provide students with the opportunity to analyze a number of specific markets and the additional markets affected by purchases of a particular product.

The economic concept *supply and demand* is an essential element in business principles, consumer economics, and senior economics. Supply is the differing quantities of goods and services sellers are willing to offer for sale at various possible prices. As price increases, the quantity offered for sale increases. Demand can be viewed as the "opposite side of the coin." It is the differing quantities of goods and services buyers are willing to purchase at various possible prices. As price increases, buyers are willing to buy less of a particular good or service. Students should also be aware that at the market-clearing price buyers and sellers are in agreement as to the appropriate price and quantity at which to conduct trade.

High School Economics Lesson 7, "The Equilibrium Price and Quantity," helps students use the concepts of supply and demand to determine the

market-clearing price and how market changes affect price and quantity. Marketing and distributive education classes can see the need for economic skills in determining consumer price behavior. After an analysis of the current market situation, gas guzzling cars are introduced in conjunction with a war between two oil-producing nations. Students are to evaluate the market in light of these new events and determine the effect(s) upon demand, supply, equilibrium price, and equilibrium quantity. Lesson 6, "The Market Never Stands Still," assists students in understanding a number of factors affecting supply and demand and the nature of the effects. The student handouts in the lesson provide students with the opportunity to analyze eight newspaper headlines for changes in demand and seven for supply. An optional activity includes determining the specific reason behind a particular headline's effect upon demand and supply.

Give and Take Program 10, "Changing Market: Supply and Demand," helps students to understand how changes in demand and/or supply lead to changes in price and quantity demanded and/or supplied. The distinction between a change in demand/supply as compared to a change in quantity demanded/supplied is reviewed in this program. The program involves three young people opening a small perfume business at a local shopping mall. As sales of their perfume increase, they decided to increase their price, expecting to increase their profits. The addition of competition causes some unexpected developments for the perfume company.

Consumer Economics 2-3, "How Stretchy Is the Demand?" explains the concept of elasticity of demand. This concept would probably only be appropriate for a senior-level economics class. After reviewing a reading on the nature of elasticity of demand, students are asked to list five items they consider elastic and five items they consider inelastic. Teachers utilizing this instructional activity should be sure that students have a thorough understanding of demand before attempting this exercise. Lesson 10 in *High School Economics* introduces students to the calculation and interpretations of various revenue changes and may be appropriate only for advanced business education classes. "Competition and Market Structure" involves the amount of competition in a particular marketplace and the strategy of sellers that transpires because of a particular level of competition. Many factors affect the nature of market structure such as the extent of government regulation, the accessibility of market information by buyers and sellers, and the possibility of collusion. Lesson 12 in *High School Economics*, "When There Isn't Pure Competition," compares the various types of market structures and their underlying assumptions, reviews the perfect and imperfect models, and asks the students for examples of each. Students play the role of "detective" and determine who is the monopolist in a simulation. Students also decide whether to oppose a merger in an industry with varying levels of market shares between competitors.

Give and Take Programs 11 and 12 both involve examining the nature of competition, but from different perspectives. Program 12, "Why Competition? Market Structure," helps students to understand the role of prices in a competitive market. Three high school students sell candy and

popcorn at school athletic events and charge lower prices than the school's own concession stand which is being accused of price gouging by the students. After-the-program activities include student application of the concepts presented in the program involving utility regulation and antitrust legislation. Program 11, "Take Your Choice: Substitution," examines the effect of price changes of substitute products upon demand for a particular product. The program includes a number of examples of substitute products such as wood for heating oil, a horse for a truck in transportation, fresh fish for meat, canned tomatoes for fresh, and plastic bowls for steel bowls.

The concept of *income distribution* refers to the idea that incomes are generally dependent on the value of goods or productive services that are sold in the marketplace. Businesses or consumers that own larger amounts of more valuable economic goods and services receive more income. One of a number of factors affecting the distribution of income is tax policy. *Tax Whys* Program 4, "Taxes Affect Different Income Groups," helps students to understand that taxes can have different outcomes on families with different amounts of annual income. Differences between a progressive tax, regressive tax, and proportional tax are also highlighted in the program. This economic concept and the related learning activities might be best suited for consumer economics, business principles, or senior economics classes.

Market failures often occur when the assumptions of pure competition are not a part of the reality of a given market. Market information may not be complete and one seller or buyer may be able to affect price. Third parties to a given set of transactions may also be recipients of benefits or unfortunate recipients of costs of such transactions. This concept can be an integral part of those units of instruction dealing with government regulation of economic activity in business law, consumer economics and education, business principles, and senior economics classes. *High School Economics* Lesson 11, "Third Party Costs and Benefits," explains how government involvement in some economic activity can remedy problems arising from third-party costs and benefits and provides a thorough explanation of third-party costs and benefits and the nature of externalities. It uses supply and demand analysis to examine how externalities affect both the production of steel and education in terms of market prices and quantities. *Consumer Economics* Lesson 2-2, "Market Failures and Information," also examines the problems which arise in the marketplace when there is a lack of accurate information about products and the nature of markets. It requires students to examine a number of disappointing buyer decisions and outcomes.

Societies, as well as markets, require systems of law and justice in order to operate in an efficient manner and at the same time safeguard the basic rights of both individuals and institutions. *The role of government* is an appropriate concept for all basic business, consumer, and economic education classes introducing the need for government as a facilitator of order and economic justice. *High School Economics* Lesson 9 analyzes the far reaching effects of price floors and ceilings when governments decide that market prices are either too low or too high. Entitled "When There Are Floors and Ceilings," supply and demand are utilized to determine the different effects of floors

and ceilings upon price and quantity. Minimum wage laws and rent controls are also examined in the lesson.

Consumer Economics 3-3, "Private or Public?" examines the nature of public goods and services and explains how externalities can be an important element of decisions regarding increases in public goods. Learning activities include classifying various types of goods and services as being either public or private goods in terms of student preferences.

Give and Take Program 7, "Private or Public? Goods and Services," explains the exclusionary principle and demonstrates the relationship of the shared consumption and public goods. The program involves high school students who have cleared a vacant lot for a park and discover they cannot exclude "outsiders" from using it. *Tax Whys* Program 3, "Taxes Involve Conflicting Goals," demonstrates that the goal of raising revenue conflicts with reducing taxes and also that for a given level of public goods and services, lower taxes for some groups or activities implies higher taxes for other groups or activities. Three recent high school graduates find they have lost their jobs due to cutbacks in the public funding of a summer intern program. One of the graduates does some research and discovers the effects of various goal conflicts upon tax policy.

TEACHING STRATEGIES UPDATE: MACROECONOMIC CONCEPTS

Macroeconomics is the study of the economy as a whole. It deals with the total output and income of the economy and is concerned with the problems of unemployment and inflation. Important issues in macroeconomics are if, when, and how the government should become involved in promoting high levels of income and employment. Introduction to business, basic business, and consumer education courses should examine the government as a collector of revenues for a given bundle of public goods and services. Business principles, consumer economics, and economics would be more appropriate for more advanced macroeconomic concepts like fiscal and monetary policy, the function of the Federal Reserve, and an examination of public policy.

Gross national product is one of the most inclusive measures of our nation's economic performance. It is the total market value of output of final goods and services produced in one year. Care should be taken that output is measured in constant prices and an accounting is made for price changes which could distort the picture of what actually was produced over a given period of time. This concept is probably appropriate for all basic business, consumer, and economic education classes. Definitions regarding the key indicators of economic performance are the major thrust of *High School Economics* Lesson 14, "Economic Ups and Downs." Students are presented with some basic economic data which they plot on a number of graphs. After this activity, they answer a number of discussion questions analyzing the data in terms of real gross national product, the consumer price index, and unemployment and inflation rates.

Aggregate supply, aggregate demand, and *unemployment* are all macroeconomic concepts which should be contrasted to a microeconomic perspective of looking at individual groups of suppliers and demanders of goods and services and their respective markets. By adding up all of the goods and services produced over some period of time and doing the same for all the goods and services demanded, we get some idea of the overall performance of the economy. The unemployment rate gives some indication about the amount of idle capacity in the economy which represents opportunity costs in the form of lost production. The activity entitled "Economic Goals" in *High School Economics* reviews some macroeconomic goals and how progress toward these goals can be measured. After completing a number of computations involving employment rates and real GNP, students are asked to evaluate twentieth century economic performance given employment rates, the CPI, and Real GNP from 1901 to 1984. *Tax Whys* Program 2, "Taxes Influence Behavior," explains how taxes can discourage certain activities because producers and buyers can avoid the cost of taxes by not producing or buying goods and services that are taxed. *Give and Take* Program 5, "Where Do Jobs Come From? Derived Demand," helps students to understand that employment is also a function of aggregate demand as well as a person's human capital potential. Students realize that the demand for workers is a derived demand because it is derived from the willingness of consumers to buy what workers produce. Linda, who is pursuing a musical career, wants to win a scholarship, while both her mother and brother are involved in career changes caused by decreases in demand for the products they produce. The program's student handout helps students to understand the application of derived demand to career choices.

Inflation and deflation, which refers to either sustained increases or decreases for the overall level of prices for the whole economy, should be a part of all basic business classes. Even though business education students should have little difficulty in identifying price levels for products and services of interest to them, they will have difficulty in identifying the behavior of the general level of prices. The *High School Economics* activity entitled "The Trail of Ms. Ann Inflation" provides students with an understanding of the winners and losers associated with inflation. The activity involves a mock trial with students role-playing as witnesses and court officials. The testimony highlights some of those parties who benefit from inflation, such as homeowners, and those who are hurt from inflation, such as debtors. Another *High School Economics* activity, "Money Growth and Inflation," explains the importance of money growth in the economy and its role in causing inflation. Through a process of bidding for a limited amount of product with an increasing supply of money, students begin to realize the upward direction of prices.

Monetary policy involves the relationship between the amount of money available in the economy and interest rates and levels of output for the economy as a whole. This concept would be most appropriate for business principles, consumer economics, and senior economics classes. The *High School Economics* activity "How the Federal Reserve Controls the Money"

explains the organization of the Federal Reserve System and how the Fed can influence the amount of money in the United States through monetary policy. Students are divided into groups with different types of money. Students role-play Fed open market operations changing the money supply.

Fiscal policy consists of changes in taxes, government expenditures, and transfer payments and how they affect aggregate demand. This concept is also appropriate for business principles, consumer economics, and economic classes. The *High School Economics* activity "Analyzing Fiscal Policy" helps students to understand how fiscal policy is used to attempt to stabilize the economy and to evaluate economic conditions in light of appropriate fiscal strategies. In the activity students classify four events as expansionary or contractionary and then formulate appropriate fiscal policy moves for five different macroeconomic events.

STRATEGIES: INTERNATIONAL ECONOMIC CONCEPTS

The international concepts are becoming increasingly important as the global economy continues to emerge and grow. These concepts should not be relegated to the final two to three days of class as a separate unit of instruction, but infused throughout the entire curriculum. The concept *Absolute and Comparative Advantage and Barriers to Trade* is best left for business principles, consumer economics, and senior economics classes. Each element will require carefully sequenced learning activities. The same is true for *balance of payments and exchange rates*. These concepts could be taught in conjunction with the concepts of opportunity costs, interdependence, and specialization. *High School Economics* Lesson 21, "Why Specialize and Trade?" demonstrates the rationale for trading through absolute and comparative advantage examples and how trade and specialization can increase economic welfare. The activity involves dividing the class into three groups: tailors, farmers, and builders. Through successive rounds of trades, students begin to realize that they can increase total welfare because certain members have an absolute advantage in producing a particular product to trade. Lesson 22, "Foreign Currencies and Foreign Exchange," explains how foreign exchange values are affected by supply and demand and how changes in the availability of currency can cause a change in that currency's value. The simulation involves successive rounds of trading of pesetas for dollars in order to buy candies. Changes are made in the supply of pesetas and candies to demonstrate the effects upon foreign exchange rates. After the simulation, students complete a worksheet analyzing the final results of the simulation.

UPDATE: ECONOMIC EDUCATION REPORTS AND STUDIES

Over the past five years a number of pertinent reports and studies have been published which can assist business educators concerned with upgrading economics education planning and evaluation activities. The use of these documents can further enhance the validity of business education/economic education programming efforts. The *National Survey of Economic Education*

1981 published by the Phillips Petroleum Company and disseminated by the Joint Council contains a number of findings of relevance to business educators. The study reports that economics is approaching the status of a mainstream course of study in senior high schools. Business educators teaching introduction to business and basic business at grades nine and ten should focus upon the basic economic concepts and review the curriculum ensuring adequate economics coverage in these courses. This document also includes findings regarding what economic concepts are taught, the importance of economics in the curriculum, profiles of economics teachers, what training teachers need, and economics education topics for future research.

Additional states continue to promote an increasing amount of economics in their respective curriculums. *A Survey of State Mandates for Economics Instruction 1985-86*, an update of a 1981 study by Brennan and Banaszak, published by the Joint Council, was conducted to determine the existence of mandates for instruction in economics, free enterprise, and consumer education. The study found that 27 states have a mandate for economics instruction in some form and 15 states require a semester or year course in economics for high school graduation. Of the 27 states with economic mandates, 24 have a free enterprise/economic education mandate and 10 have a consumer education mandate. Since 1981, 3 states have added similar mandates. Many departments which teach required courses for graduation, such as social studies departments, are willing to work in cooperation with business educators by either assisting in the teaching of mandated economics concepts or delegating sole responsibility for such instruction to business educators.

Economic Education for Future Elementary and Secondary Teachers: Basic Recommendations, also published by the Joint Council, addresses the role of economics instruction in teacher training programs. The report recommends that prospective teachers of business education courses have at least nine semester hours of economics credit including an advanced course and that business education teacher training programs include instruction in the pedagogical treatment of economics. Business education teacher trainers may want to provide for 12 credit hours of economics in the curriculum including instruction in economic education to ensure a high level of economics qualification for future business educators.

Economics in the School Curriculum, K-12 published by the Joint Council and the National Education Association in 1985 includes a number of recommendations of interest to business educators. Soper and Brenneke believe that no one textbook is complete and the supplementary teaching resources should be used whenever appropriate. Business educators have long advocated the use of a variety of resources in the curriculum development process. The quality teaching strategies reviewed in this yearbook chapter would be an excellent starting place. Woyach recommends a global perspective to economics instruction and believes such a perspective strengthens the economic component. This is probably one of the least developed areas in business education curriculum models and is in need of further attention.

The second edition of *Economics in the Business Curriculum* published by the Joint Council in 1986 is probably the most comprehensive "one stop" economics education resource available to business educators. Experienced business education authors and practitioners provide strategies, techniques, and resources for infusing economics into almost every course in the business education curriculum appropriate for significant amounts of economic concepts and instructional activities.

SUMMARY

This chapter has attempted to answer two vital questions regarding the changing and developing economics component of business education. The first one, regarding the determination and implementation of the most current and quality types of resources for economics teaching strategies, provides a welcome answer for business educators looking for new economics education challenges and resources. The second question, regarding relevant recent reports and studies, provides a number of specific findings and recommendations for business educators concerned with new types of effective economics education practices that maximize the impact of business education efforts. The challenges facing business educators interested in increasing the quality and quantity of economics in business education classes and programs are best met with a concern for planned and validated economics curricular and teaching strategies.

CHAPTER 12

Linkage of Business and Industry with Education for Business

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Cooperation and coordination between education, specifically education for and about business, and the business community has become a popular concept in recent years. Collaborative arrangements with business, industry, and government are paramount if optimum resource development and utilization are to occur. Three important factors have prompted increased research interests in the area of linkage and collaborative efforts:

- An attempt by the Reagan administration to halt the escalation of government spending and to begin a countertrend of decreasing levels of federal assistance
- A growing realization that scarcity of funds at all government levels demands more accountability and measurement of outcomes than have been required in the past
- A growing awareness on the part of human resource planners and administrators that cooperation, not competition, can best meet the vast and complex needs of a changing technological work force.

The interest in linkage also has been spurred by two other major developments which are significant impacts for business education—the emphasis on computer technology in every facet of society and the increased interest in training and development, especially in nontraditional, noneducational environments.

Because computer technology has infiltrated every occupational field, avocational area, and the home, it is now possible to access and have access to vast amounts of information. Business educators have made great strides in offering instruction relating to the many phases of information processing, yet providing applications training in many computer areas has been left up to other educators as well as to business, industry, and government. Partially this is due to the tremendous growth in computers for the masses over a short period of time.

Linkage in technology areas makes a great deal of sense. In the first place, it is no surprise to anyone that the acquisition of state-of-the-art facilities and equipment is costly. Business and industry *need* these resources for personnel to complete day-to-day operations and, thus, will make the necessary expenditures for them. On the other hand, education relies heavily on its ability to use the appropriate methodology and strategies for teaching personnel to work with the technology. It is all too obvious to link the technology (be it computers or any other area with significant mass impact)

with the human resources to work together for the best possible utilization of resources.

In general, education has not been geared up to handle rapid change, especially when one considers it probably takes several months at the very least to implement a new course in an educational setting. Linkage for the purpose of staying abreast of new technologies not only is a good practice, but is vital for future survival of educational institutions.

One of the most frequently cited complaints of the business community is that education is not responding to its needs in a timely fashion. If industry is unable to wait for education to respond to its needs, more and more organizations will become self-sufficient in committing the resources for developing their own training programs using their own instructors, facilities, and equipment. Business and industry will welcome the opportunity for linkage if it means educators will be able to anticipate needs, gear up for them, and offer programming that is timely and relevant to a flexible and changing economy.

In response to concerns for resource conservation, federal legislation is placing explicit requirements on states and local agencies for providing programs that utilize resources in an efficient and cost-effective manner. For example, the Job Training and Partnership Act of 1982 and the Carl D. Perkins Vocational Education Act of 1984 mandate that job training programs show visible evidence of linkage. This means that deliberate strategies must be employed for achieving coordination and linkage. The monies that are allocated to states under these laws are based on an assessment of occupational demands, students' needs, and program quality assurances.

While program accountability is being called for in the federal legislation, state and local legislation pertaining to educational programs is becoming just as demanding. The thrust for program monitoring, entry and exit exams in teacher education programs, and competency testing for teachers and students are areas which are of concern to all educators. For business educators, the improvement of all of these areas as well as meeting the mandates of legislation can be accomplished through linkage with business, industry, and government.

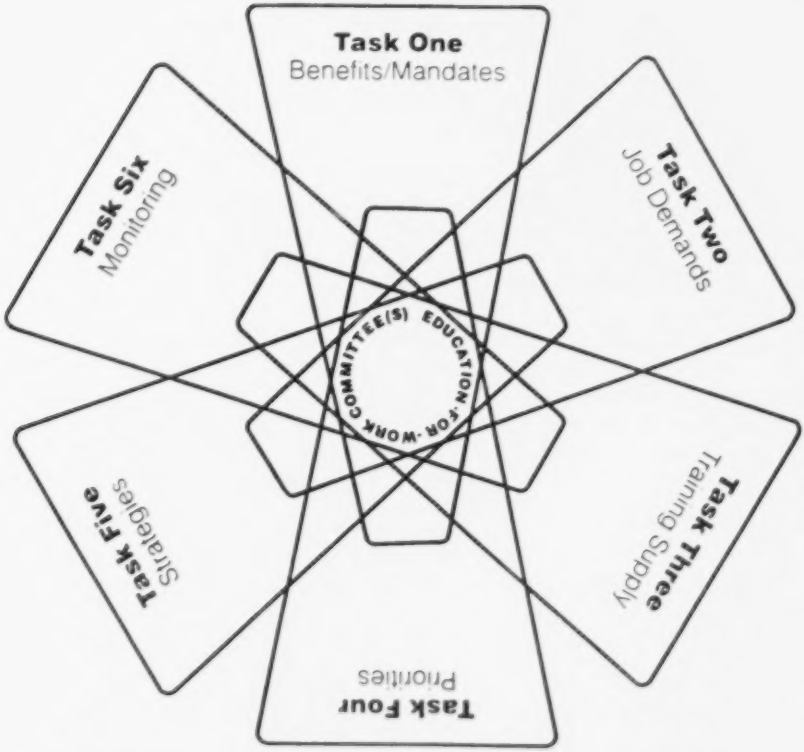
A MODEL FOR LINKAGE

The development and maintenance of long-term, mutually beneficial collaborative arrangements do not happen by accident. Meaningful linkages require time, effort, and significant commitment. Because there are so many barriers to linkage, guidelines and models for linkage can be very useful to linkage facilitators in establishing partnerships and in negotiating strong collaborative agreements.

During fiscal year 1985 and under contract with the Texas Education Agency, a linkage model for the State of Texas was developed through the University of Houston-University Park, College of Technology, Technical Education Department. The document, *Education-for-Work: A Model for Establishing Linkages Between Education, Business, Industry, and Govern-*

ment, was designed to assist individuals, at any level, to facilitate linkage.[1] The linkage facilitator guide/resource handbook is based on an integrated six-task model, shown in the figure below.

A Model for Facilitating Linkage Between Education, Business, Industry, and Government



The six linkage tasks of the model, described briefly in the following six sections, should be important to all educators in maximizing resource identification and utilization. The extent to which these tasks are understood and applied in the facilitation and implementation of linkage will be important to the future survival of educational programs, especially business education programs.

Task One: Linkage mandates and benefits. Since the 1960's the calls for linkage and coordination between education, business, industry, and govern-

[1]O'Neil, Sharon Lund, and Greenwood, Katy Brown. *Education-for-Work: A Model for Establishing Linkages Between Education, Business, Industry, and Government*. Houston, Tex.: University of Houston-University Park, 1985.

ment have been noticeable in federal legislation and policy development. Those calls were more frequent and implicit in the 1970's. Now evidence must be shown by recipients of federal funds that existing resources are not duplicated. Overt efforts must be made to coordinate and plan with agencies and organizations who have similar goals in meeting the needs of a particular client.

Federal expenditures for recent education-for-work programs have been extensive. For example, over $15 billion was spent by federal agencies in 1979 for education-for-work programs. While this figure does not include the federal investment in job training for defense spending and tax expenditures, a large percentage of the 1979 $116 billion budget of the Department of Defense went for technical training, instruction, and research on training methods—partially due to the promise of technical training, or job skills attainment, as the primary recruitment tool for a peacetime military.[2]

The estimate for 1986 federal human resource development for education, training, employment, and social services through the Departments of Labor and Education is $29.3 billion. In addition to federal outlays, $33.8 billion is estimated for 1986 tax expenditures as outlay equivalents for these same four areas.[3] Certainly these statistics have contributed to some of the legislation efforts mentioned earlier in this chapter.

The many alternative programs where people can obtain formal job training, the majority of which are funded with government money, demand careful and coordinated use of funds. Due to decreased funding in many areas, there should be a strong impetus at all levels to plan job training based on linkage and coordination. At the local level, the actual benefits of such programs are exciting and gratifying because the real benefactors of linkage are clients. Through good linkage efforts, referrals between competing and isolated delivery systems become minimal since individuals' needs are met and clients are assisted by an informed, collective advocacy that is cooperating to make the most expeditious use of resources.

Task Two: Job demands information. For linkage and coordination to take place, the linkage facilitator must be totally knowledgeable about job demands within a given labor market area—the primary area where workers or potential workers can be employed within a commutable distance. This primary planning area, the labor market area, must be studied for existing employee demands as well as for previous trends in employment configurations. Employment by Standard Industrial Code (SIC), seasonal and structural employment figures over time, and results of employers' surveys (whether they are employer self-studies, chamber of commerce questionnaires, manpower studies, or education-sponsored local surveys) can begin to collectively give a composite picture of the previous and current demands for employees.

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[2]National Commission for Employment Policy. "Sixth Annual Report to the President and Congress." Washington, D.C.: the Commission, December 1980. pp. 138-39.

[3]Office of Management and Budget, Executive Office of the President. *The United States Budget in Brief, Fiscal Year 1986*. Washington, D.C.: Government Printing Office, 1986.

The planning area for which a job demands information base is established should be well defined for subsequent linkage tasks to be meaningful. The planning area selected probably will be a service delivery area (SDA) or a metropolitan statistical area (MSA). The selection of an SDA over an MSA will depend, to a large extent, on the geographic location where linkage is to occur. An MSA coincides with labor markets and, with the exception of New England, usually is defined on a county basis. The combined area, for general economic and social purposes, should constitute a single community. On the other hand, SDA's, also defined on a county and population basis, are closely tied to private industry councils (PIC). Since PIC's usually work with the state employment commission, with business and industry, and with educational institutions in their respective geographic areas, SDA's are preferred linkage areas.

Rather than relying solely on employment projections that have been derived statistically, the astute facilitator of linkage will monitor local and regional economic downturns and adjust available projections accordingly. Monitoring the classified sections of newspapers, routinely interviewing professional placement officers, and meeting with state and local employment service personnel will yield additional information to begin putting together a realistic picture about a given geographic area for which job trainers are preparing workers.

Task Three: Training supply information. Once the linkage facilitator has as complete information as possible about the job demands for the geographic area to be served, the next task is to obtain just as complete a picture about the existing job training available for clients in the area under study. To begin obtaining the necessary information for job training in a particular geographic area, the linkage facilitator should become familiar with the current state plan for vocational education. This plan has such information as current and projected assessments of general and specific occupational needs of the area and of special groups of individuals; an assessment of the quality of training (curriculums, equipment, instructional materials, program relevance and flexibility, and program responsiveness to facilitate the transition from school to work); and the capacity of local educational agencies to deliver the needed services.

Using the U.S. Office of Education job training codes (or another classification system that can be cross-walked to the Dictionary of Occupational Titles), the facilitator should compile the necessary information to ascertain the extent of training available to clients. The information gathered about the kinds of training available in the labor market area should include such information as the length of training, current enrollments, placement figures, and credentials offered by each of the alternative training systems. This information can be obtained from state agencies governing each of the education/training institutions and the institutions themselves—secondary schools; postsecondary public institutions; proprietary schools; apprenticeship training programs; community-based organization training; federally funded programs available through the Job Training Partnership Act, the Department

of Human Resources, Vocational Rehabilitation, and adult education; and business and industry training sponsored by industry.

When this information is collected, the linkage facilitator can begin to plan realistically about how and where linkage between job training entities can result in determining the best options for the clients in the labor market area.

Task Four: Linkage priorities. Because the central entity for which linkage is intended is the client (individual learner), the priorities for linkage should be client centered. Meaningful linkage partnerships will be based on mutually identified priorities for linkage, a task which should be carried out by the linkage facilitator and the education-for-work committee (EWC's are described in Task Five). The resources and needs of the potential partners may dictate which groups will have the most active roles in facilitating the collaborative arrangements. Some of the following areas may become linkage priorities which have a potential educational base: the present education and training demands and potential worker and training supply; program research and development concerns; curriculums, training emphasis, facilities, equipment, staffing, and personnel; work-study, co-op arrangements, internships, part- and full-time placements; and follow-up studies.

Each of the linkage bases for potential linkage priorities should be considered; that is, educational, business, industry, government, and community. From each of the identified needs bases, it should be possible to determine where linkage arrangements would be beneficial to two or more entities. While there may be a consensus of needs, priorities for linkage for one entity may be quite different than for another. Successful linkage, based on the premise of mutual benefit, must consider each of the partner's interests and priorities.

Task Five: Linkage strategies. The facilitator of linkage must take a systems approach to linkage. This means setting up good communications networks among the chamber of commerce, government and state agencies, formal and informal organizations, and service and social groups. Informal as well as formal contacts and associations are vital to the establishment and maintenance of strong networks. Active research within and among networks must be fostered, with every resource viewed as a "linkage potential."

The organization of one or more education-for-work committees (EWC's) will be essential to the linkage process. These EWC's, unlike most traditional committees including advisory groups, must be multifaceted in purpose while mutually serving their member-partners. Since EWC members are to be selected for their abilities to represent their organizations in decision making and in the allocation of resources, the linkage process should be facilitated more expeditiously than can be accomplished through more traditional means. Additionally, EWC's have the responsibility of fostering awareness and identification of resources—two key components of linkage.

Negotiating a linkage agreement is a direct outgrowth of employing the appropriate and a variety of strategies in establishing partnerships. The agreement should be formal in the sense that a letter or memorandum is prepared, detailed minutes of a meeting are written, and/or a formal contract is negotiated. The less ambiguity existing in a partnership, the less chance

there is for misunderstanding among the partners. While it may be totally obvious that good communications exist among the partners, the interpretations of an agreement may be quite different when viewed by individuals who have educational versus industry backgrounds. This is another barrier to linkage which is often overlooked by potential partners of a collaborative effort.

Tax Six: Linkage monitoring. Process and product evaluation, necessary to linkage where many delicate balances may exist, is essential to linkage. The EWC has a major role in the evaluation and monitoring process. No matter how formal the interagency agreement nor how vast the resources, the lack of success of linkage (nonlinkage) will be readily evident if the important task of monitoring/evaluation is not carried out rigorously, continually, and systematically.

The five premises upon which the structure of linkage evaluation should be based include: (1) a well-thought-out philosophy of evaluation should be a guideline for monitoring linkage; (2) the linkage partnership should be aimed at producing measurable changes or impacts for the population it serves; (3) the linkage agreement should be designed to fit prestated goals, priorities, or objectives; (4) the linkage partnership should be dedicated to long-term changes while executing the more measurable short-term goals, objectives, or priorities; and (5) the monitoring/evaluation process should provide useful information to the linkage agreement and process.

Evaluation strategies, including statistical methodology, should follow the types of data collected and the format of each agreement. Effective evaluation will focus the goals and objectives into quantifiable and qualifiable terms and will identify the key personnel involved in the evaluation. Planful, purposeful evaluation of the linkage agreement process and product will provide the direction for the ultimate success of a linkage agreement.

LINKAGE AND BUSINESS RESOURCES

The literature is beginning to become replete with examples of successful linkages which have brought together the various segments of the population for the purpose of job training. Even more examples of linkages surface when information is gathered about job training efforts. Having the ability to communicate clearly—being able to articulate both the need for and the importance of a sound foundation of labor market information—is vital to a potential linkage facilitator if these examples are to be found and explored for determining their contribution to other linkages. The facilitator of linkage as a collector of information must show sensitivity to trends and characteristics of the geographic area under study and have the ability to organize information into meaningful terms. The skill of packaging the collected information in a usable, beneficial, and updateable format is especially vital with the vastness of information available today.

Basic information sources. There are several sources which should be of particular interest to the linkage facilitator in gathering information on job demands and training supply. The following sources pertaining to classifi-

cation systems and programs are ones with which the linkage facilitator should become familiar:

- Standard Industrial Classification Manual (SIC)
- Dictionary of Occupational Titles (DOT)
- Selected Characteristics of DOT Occupations
- Standard Occupational Classification Manual (SOC)
- Vocational Preparation and Occupations (VPO)
- Classification of Instructional Programs (CIP).

Other data sources which contribute to a linkage facilitator's information base for job demands and training supply include the following national sources:

- Guide for Occupational Exploration (GOE)
- Occupational Outlook Handbook (OOH)
- Occupational Outlook Quarterly
- Exploring Careers
- Occupational Projections and Training Data
- U.S. Industrial Outlook Handbook
- Bureau of Labor Statistics (BLS) Area/Industry Wage Surveys
- County Business Patterns (CBP).

A variety of state sources offer information to the linkage facilitator about the job market and its trends. It is important to cross-walk information from these sources to obtain accurate pictures of local situations. Some of the state sources of special interest to individuals interested in facilitating partnerships include:

- State Occupational Employment Statistics
- Office of Employment Security (OES) Industry/Occupational Employment Projections
- ES-202 Employment Compensation and Wages Data
- Career Information Delivery System (CIDS)
- State Employment Commissions
- State Education Agencies/Departments.

Most of the above sources are referred to and/or discussed in a publication of the National Occupational Information Coordinating Committee entitled, *Improved Career Decision-Making Through the Use of Labor Market Information.*[4]

Another basic resource which should be considered essential for the linkage facilitator is *The United States Government Manual*, Office of the Federal Register, National Archives and Records Service, General Services Administration, obtainable from the superintendent of Documents, U.S. Government

[4]National Occupational Information Coordinating Committee. *Improved Career Decision-Making Through the Use of Labor Market Information.* Fourth edition. Washington, D.C.: Government Printing Office, 1984.

Printing office. Using these and local-specific resources, individuals interested in linkage will become resourceful not only in obtaining knowledge about a geographic area for becoming aware about the needs of the population, but also in knowing where to obtain information which will contribute to partnership establishment.

Facilities and equipment resources. Business educators are in agreement that students should be trained within facilities and on equipment that are currently representative of the business environment. Since many students obtain employment in offices that are using the latest technology, obtaining and maintaining state-of-the-art facilities and equipment for instruction in business education classrooms continue to be main concerns of business educators. However, business educators must realize they have an advantage over other educators when it comes to tapping industry resources. That is, virtually every business and industry in society uses and needs the products of the business education classroom.

Existing ties with business and industry that have been formed for the purpose of providing cooperative education and work-study programs, training stations, and part- and full-time employment opportunities must be strengthened and must become very future oriented. Such ties should be made with individuals who are the decision makers of organizations, persons who can commit resources. As an awareness of business education needs for facilities and equipment becomes apparent to industry, business educators move into a prime position for creating partnerships to meet those needs.

For example, many businesses will be receptive to internships where teachers and students can learn new technology and procedures if, at the same time, industry goals for productivity can be met. Teachers should capitalize on establishing internships that are set up on a continuing, rotating basis so each business becomes an extension of the classroom. By working with the same industries, yet periodically expanding the program to include new businesses, relationships will grow and all involved entities will become more knowledgeable about each other's needs. Such an awareness also paves the way for planning meaningful field trips, for obtaining guest speakers who relate to the classroom learning environment, for using industry facilities, and for obtaining donations of equipment and other resources.

The contribution of business education to industry must be clear. The goal must be more specific than the general preparation of workers for business. If an industry can see how a business education program benefits it specifically, it will be more receptive to enter into a reciprocal agreement that utilizes the program to its fullest. Interaction with industry will help business educator "entrepreneurs" gain a keen awareness of community needs and, thus, help in showing business the real benefits of a program.

As goals of the potential partners are discussed, alternative ways of providing education and training must be investigated. It is quite unlikely that many business organizations will be able to make large donations of equipment to education, but industry may be able to offer a wide range of services by providing facilities, equipment, and personnel for on-site training —alternatives that heretofore may not have been considered feasible. These

alternatives to the traditional classroom setting must be explored with open minds.

Funding resources. Due to the present conditions of the economy, organizations cannot afford to be as altruistic as they may have been in the past. Thus, it is unlikely that an individual who approaches an organization with a resource request will immediately come away with the necessary funds or resources to implement a program. For this reason, business educators must show the benefits of their programs so reciprocity can occur. Building meaningful relationships with business is becoming imperative for seeking out and obtaining useful resources, especially where monetary resources are sought.

Funding resources also may be found by perusing the various funding source publications available at the public library. Many of these national, regional, state, and local publications offer listings of the foundations that are amenable in assisting education with specific needs. Some of these publications also give the types of assistance they will provide, state what conditions must be met, and outline the procedures for submitting an application. The National Science Foundation is one such source which offers numerous opportunities for obtaining funding, especially with respect to research and development. Collaborating with a business organization in submission of a proposal to obtain foundation funds is one way innovative training and education may take place.

Although granting through federal and state sources is quite common, more and more restrictions are being placed on the types of activities that can be pursued with government monies. The *Federal Register*, similar state-level publications, and periodic request for proposals/applications from state agencies are common sources for educators to explore avenues for obtaining funds for exemplary and innovative resources. These resources should not be overlooked because many of these opportunities may be stepping-stones for precipitating program establishment based on joint ventures with business and industry. Also, since state departments of education and Job Training Partnership Act offices are disseminators of federal and state funds, it is advantageous for the business educator to be familiar with their resources and application procedures in seeking application for the funds available through these government sources. This may be accomplished directly or through research and development offices in local postsecondary institutions, colleges, and universities.

A research and development office associated with an educational institution may be a good resource for educators in identifying information and sources for funding since one of the purposes of many of these offices is to identify funding sources. Usually these offices can supply information about grants, scholarships, and awards that are available from a variety of private and public institutions, foundations, societies, and councils.

The funding opportunities that are available through vendors are important resources for the business educator. For example, both Apple Computer, Inc., and the Tandy Corporation have offered extensive educational grant programs that have benefited numerous individuals directly involved in their

programs as well as have been advantageous to school systems all across the nation. These and other organizations have provided a variety of resources to educators including vendor training on basic systems and software applications, educational scholarships for teachers to take computer-related courses, curriculum materials for classrooms, discounts on computer products, grants for obtaining computer equipment, and funding for creative and model projects.

Just as the establishment of vendor relationships should be a top priority for business educators, fostering relationships with employment contractors, professional organizations, and trade associations also must be high on the list. Many opportunities, including scholarships, grants, training, and/or internships, may be available for teachers and students alike from local employment contractors including Kelly Services, Manpower Temporary Services, and Olsten Temporary Services. Likewise the local chapters of business-oriented professional organizations such as Professional Secretaries International, American Records Management Association, and the Association of Information Systems Professionals should be contacted to explore the extent of their resources for grants, scholarships and other funds. Business education professional organizations as well as the Delta Pi Epsilon Research Foundation should not be overlooked for obtaining funding for innovative and exemplary research leading to program development and improvement.

SUMMARY: LINKAGE FOR SURVIVAL

National sources continue to place an extremely high priority on the need for skilled office workers in meeting labor market demands of the present as well as in the decades to come. It follows that business training also will continue to be a high priority even though the emphasis will shift as certain tasks and procedures follow the changes in technology. Within this changing environment, frequent and direct attacks on education will become popular political issues. Educational reform throughout the nation will result from some of these attacks.

Greater accountability in education accompanied by more legislative mandates, including mandates for linkage, will be imminent. To stay "in business," business educators must listen to the cry for cooperation and coordination—if for no other reason than to utilize resources in the most efficient and cost-effective ways possible.

These and other trends point to the necessity of building strong coalitions within our own professional organizations. They point to the need for forming partnerships within education. Similarly, linkages with business and industry may be the only survival mechanism for some programs. Such cooperative efforts must be initiated by business educators.

If business educators become active linkage facilitators, they will avoid having to react to the future and will become role models for others to follow. Business educators who accept this challenge will provide strong leadership toward directed action in establishing partnerships for meeting the important goal to which business education is dedicated—education for work in society.

CHAPTER 13

Reinforcing the Basics Through Business Education

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"Our society is obsessively concerned with higher education as preparation for work and it downgrades the intrinsic, lifelong value of education. Our secondary schools reflect this obsession by valuing only the college bound. Such a narrow focus ignores the fact that approximately 80 percent of the jobs in America do not require a college degree, and most students will not obtain one."[1]

In April of 1983 the National Commission on Excellence in Education published a report which focused on the nature of quality education in the modern world. It was the most prominent of the nearly 20 reports, books, and studies issued in an 18-month time period. Examining the state of education in America, the Commission concluded that the primary goal of education was to provide instruction which would aid all students in developing themselves to the utmost. By doing so, students would be more capable in securing employment, attaining mature judgment, and successfully managing their own lives. It is the relationship of education and the preparation for work that is the focus of this chapter.

In determining what areas of instruction would provide such development, consider the forces within our society which have changed its very nature. Two decades ago the skills considered prerequisite to employment were reading, writing, basic mathematics, and a general understanding of culture and government. The advent of the computer age has changed the basic work environment, and as a result a change is necessary within our educational curriculums.

The Commission reacted to the findings by calling for schools to adopt the "new basics." They defined these as:

- 4 years of English
- 3 years of science
- 3 years of math
- 3 years of social studies
- ½ year of computer science.

School districts across the country jumped on the politically popular

[1] National Commission on Excellence in Education. *A Nation at Risk: The Imperative for Educational Reform.* Washington, D.C.: U.S. Government Printing Office, 1983.

"excellence" movement and began requiring more of the same subject matter that had inadequately prepared students in the past. One state, for example, recently mandated graduation requirements totaling 13 credits with another 8.5 credits recommended. This, despite the fact that the national dropout rate is 28 percent (incredibly higher for many inner-city school districts) and despite the growing evidence that mandating more of the same will increase the drop-out rate. Such an approach to our educational problems was once described as "train the best and shoot the rest."

This approach confuses core courses with core concepts or principles. John Goodlad in his book, *A Place Called School*, argues for a core curriculum focusing not on common topics but rather on a common set of concepts, principles, skills, and ways of knowing. The implication of Goodlad's argument is for an interdisciplinary approach to education.

BUSINESS EDUCATION DEVELOPS BASIC CONCEPTS

While reading, writing, and arithmetic would still be defined as basic today, this elementary definition of basic skills needs to be extended to complement our changing world. Thought must be given to forces within our society that did not exist two decades ago—rapidly changing technology, the increasing need for both men and women to work, demand for productivity to compete in an international marketplace, changes in the structure of the labor market, and the emphasis on lifelong learning. It is predicted that 30 percent of all jobs that will be available in the year 2000 do not even exist today. By 1990 the U.S. economy is expected to create nearly 20 million new jobs with over half of them in white-collar occupations. What will be basic in the next century? Computer skills (rapidly changing technology)? Thinking skills (white-collar jobs)? Education for employment (both men and women working)? Lifelong learning?

Let us also consider:

1. Most people lose or change jobs not because of a lack of technical skills but because of poor interpersonal relationships and a lack of employability skills.
2. Employers frequently complain that employees lack a basic understanding of business and govenment operations.
3. What is the role of education? Is it not, at least in part, to educate students for employment—to provide students with an opportunity to perform meaningful work?

It is estimated that 80-90 percent of the computer applications needed for the workplace are business related. Because of this, business educators are uniquely qualified to teach computer literacy/applications to *all* students regardless of their career objectives. Keyboarding skills, for example, are required if a student is to be successful in computer operations. Consequently, one component of any quality basic curriculum is to teach students keyboarding prior to the time they will be using a computer.

The information age for which business and marketing educators are training students is extremely dependent upon communications. Traditional

English programs rarely touch upon communications as they relate to employment, technology, and the information era. Business educators are exceptionally well qualified to teach communications because of their ability to relate the basics of punctuation, grammar, sentence structure, speaking, listening, etc. to the development of technical skills needed in the real world. Information is power in the workplace, and the ability to communicate this information is critical.

The need for students to receive training in education for employment and to develop employability and human relations skills has been well documented. Typically, business and marketing education programs offer work experience or simulations at the senior level. Teachers match students' backgrounds and interests with proper job placements and provide related classroom instruction. Training agreements, training plans, and employer evaluations are all methods used to assure that students are monitored not only to receive instruction related to their career objectives but also to receive guidance in the development of employability skills and education for employment. No better method than using business and industry has yet been found to mold students' work attitudes and human relations skills to match employer demands. Most follow-up studies support the notion that employers are more satisfied with the performance of students who have received such training than with students who have not. Perhaps *more* students need to be given an opportunity to participate in similar programs. Some basic skills are *not* best taught in traditional classroom settings.

To learn the theory of basic skills is only one component in the process of educating students. Critical thinking plays an important role as students must take basic skills instruction and apply that instruction to solving problems in the world of work. Vocational education helps students refine that process as students learn practical applications for basic skills. Some students test very well in written exams on reading, writing, and arithmetic. Of what use is such knowledge, however, if it cannot be applied to real-life situations? Other students do not learn well in traditional classroom settings, but do learn when basic skills are reinforced through practical applications and a purpose is shown for learning. When a payroll specialist or budget analyst makes a mistake that potentially costs a company thousands of dollars, he or she becomes critically aware of the need for both basic computational skills and the ability to relate this knowledge to practical applications.

For a world becoming more complex, the authors suggest the following concepts or principles as "basics."

Mathematics:	Understand algebraic and geometric concepts, simple statistics and probability measurement and estimating, mathematical functions (+, −, ×, ÷, %); apply mathematics to life situations.
English:	Comprehend, evaluate, and use written material, write in a logical manner using correct structure and standard English; listen effectively and discuss ideas, gather ideas from secondary sources; know our American literary heritage.
Science:	Understand principles or laws of mechanics, biology, chemistry,

	and physics; understand and employ the methods of scientific inquiry and reasoning; apply sciences to everyday life; develop awareness of the social, political, and environmental impact of scientific and technological development.
Social Studies:	Understand one's role and possibilities within the larger context of community, state, nation, and world; understand how ancient and contemporary ideas have shaped our world; understand the bases of our economic and political system; understand alternative types of societies; understand the interdependence of all nations.
Education for Employment:	Develop ability to get along with others; learn self-discipline; learn time management; develop ability to communicate effectively; develop career awareness; understand business.
Critical Thinking:	Develop ability to define a problem; develop ability to analyze a problem; develop ability to make a decision.
Computer Literacy:	Develop ability to use computer hardware and software; learn keyboarding; learn role and uses of a computer; learn input/output procedures.

If employability is a fundamental goal of education, the concepts and principles discussed above constitute a major portion of the needed curriculum. Business education is a curriculum area uniquely capable of delivering applied courses of study that will develop competence in these areas.

The business curriculum can be divided into four core areas: administrative support, business enterprise, accounting, and marketing. These areas require the development of competencies in each of the proposed seven "basics." An example of a business education curriculum helps to identify what courses emphasize or develop each of the basic concept areas.

Administrative Support	*Basic Concepts*
Keyboarding	data entry
Information Processing	reading, writing, critical thinking, computer literacy and application, problem solving, listening.
Business Communications	reading, writing, human relations
Business Procedures	problem solving, management, human relations, government
Basic Business	government, reading, writing, economics, mathematics
Business Occupations	career opportunities

It can be seen that the core area of administrative support in business education offers training predominantly in communication. Reading, writing and computer literacy are key components in this area of study. The student learns how to apply these skills in the business world (valuable training in a labor market which is expected to expand to represent some 50 percent of available positions by the year 1990). Human relations skills and knowledge in the areas of government and economics are also incorporated under this category of business education.

The curriculum model for business enterprise incorporates many of the same fundamental areas as administrative support in addition to focusing on management, law, and economic practices within the occupational environment.

Business Enterprise	*Basic Concepts*
Keyboarding	data entry
Business Economics	American economic system, business strategies
Business Management	organization, interaction, productivity, human relations
Business Law	government, economics
Business Communications	writing, reading, listening, speaking
Business Computer Application	computer literacy, organization
Basic Business	government, economics, math, reading, writing
Business Occupations	career opportunities

Business enterprise develops the areas included under communications and social studies. Unlike the administrative support curriculum, business enterprise develops not only work-related skills but also a sound foundation for consumer awareness and citizenship. Consumer awareness and citizenship skills are necessary to increase productivity on a national scale as they help provide the student with valuable keys to social success and group interaction.

Accounting skills also aid in increasing productivity by developing organizational and thinking skills.

Accounting	*Basic Concepts*
Keyboarding	date entry
Recordkeeping	organization
Accounting	mathematics, organization, critical thinking
Business Communication	writing, reading, listening, speaking
Basic Business	government, economics, math, reading, writing, computer application
Business Occupations	career opportunities

Accounting promotes the development of logical sequential thinking thereby increasing the efficiency of the student's thought process. In addition it provides a strong base in mathematics and computer literacy.

Marketing education, as in the other core areas of business, provides many opportunities to develop competence in the seven basic areas. An example of a marketing education curriculum would look as follows:

General Marketing	*Basic Concepts*
Economic Fundamentals of Marketing	economic concepts, economic systems

Human Resource Foundations	mathematics, communications, employability skills
Marketing and Business Fundamentals	critical thinking, government, understanding of other societies
Financing	algebra, mathematical functions, computer applications, career awareness
Product Planning	reading, problem solving, career awareness
Promotion	communications, career awareness, writing
Purchasing	mathematical functions, decision making, computer applications
Risk Management	mathematical functions, computer applications, critical thinking
Selling	communications, human relations, secondary research, listening, speaking
Marketing Research	secondary research, scientific method, problem solving, computer applications
Pricing	algebra, mathematical functions, word problems
Entrepreneurship	career awareness, business

Overall the business education curriculum provides a base in elementary skills. The coursework includes instruction in many basic skill areas and also promotes the practical application of elementary skills within the work environment.

EDUCATION TO WORK IN AN ACADEMIC CURRICULUM

Once areas of skill are defined as basic to the education of the student it is necessary to develop a curriculum efficiently combining such areas. The question becomes how to implement a program which stresses English/communications, critical thinking, social studies, computer literacy, mathematics, employability skills, and science without lengthening the study period or decreasing the instructional hours devoted to each subject. The answer appears to lie in an interdisciplinary approach to education.

As the authors of *The Unfinished Agenda* argue,

> We need multiple alternative strategies to help those students who experience difficulty—who are bored, frustrated, alienated, or angry—to master basic material and see how abstract courses and concepts relate to real-life experience.[2]

The model suggested by *A Nation at Risk*, all students taking a prescribed number of courses offered along traditional departmental lines, no longer

[2] *Ibid.*

makes sense in our complex world, and indeed may be irrelevant. What would make sense would be a curriculum which synthesizes liberal education and vocational education, a curriculum that focuses on basic concepts that provide the competencies and skills needed for survival in society. Such a curriculum would provide relevance to the student and make the subject matter significant to the student. This will allow the student to make sense of the coursework and incorporate the subject matter into his/her own life and behavior.

The "excellence" movement has erroneously been translated by some to mean a need for raising academic standards. More of the wrong subject matter will not cure the perceived ills of the nation's schools. Many people trained in vocational areas have postsecondary, master's, and doctorate degrees. The national president of FBLA (Future Business Leaders of America) gave opening remarks at the 1984 national conference and left for West Point the next day. How very sad if he had been denied the opportunity to develop leadership, decision making, and other skills through a vocational student organization.

As noted earlier, many school districts have raised academic requirements in response to the public clamor for reform. In addition, students interested in postsecondary education are often steered into additional courses that will consume all of a student's schedule during high school. A student who desires to include coursework in computer literacy or employability skills often finds there is no time to do so. There is a need for curriculum planners to differentiate basic concepts, course offerings, and graduation requirements.

Many courses provide basic skill instruction. It is simply necessary to develop a specific syllabus of class hours devoted to each skill within the course and a means of determining competency in these skill areas in order to provide documentation for cross-credit evaluation. The business education curriculum offers a wide range of basic skill instruction. As a result academic credit can be assigned quite easily without undermining the quality of basic skill instruction. A recent study conducted in Washington illustrates the practicality of cross-credit curriculum structure.

The Sno-Isle Skills Center offers vocational programs in the Mukilteo School District. Janet Carlson directed a project on the development of a curriculum package that defined the specific course hours devoted to math, science, and language arts skills inherent in the courses being taught at the vocational center. The information gathered was to serve as a basis for a cross-credit proposal which would allow students to receive competency credit during their training at the skills center. A base definition of credit was assigned at 60 instructional hours. The course work was then divided into instructional units and credit was recommended accordingly. This method of curriculum structure was found to have value not only in credit evaluation but also in regard to curriculum and lesson planning. By dividing the course into instructional units the instructors were able to evaluate the specific potential for competency achievement in each unit of the course, thereby increasing the potential for both basic and vocational skill development.

The business and marketing education curriculum which promotes the development of employable and productive citizens as one of its primary goals serves a vital function in the development of basic skills. The

development of a cross-credit system would allow educational facilities to promote a stronger and wider range of basic skills instruction, thereby increasing the standard of education as well as the students' potential in the job market.

Vocational educators realistically cannot afford to devote limited, valuable classroom time to teaching students the most elementary basic skills. Instead, students' understanding and development of basic skills should be further clarified through vocational instruction. Unfortunately, some students do enter vocational education programs severely lacking in basic skill preparation because traditional "academic" methods used in teaching basic skills have not been successful. It is often through a student's understanding of the need for basic skill preparation (use on the job) that he or she develops the motivation needed to learn. It is time that *all* educators and administrators recognize the need for "vocational" and "academic" education to work together in the basic skill preparation of students. It is also time that long overdue credit and recognition is given to vocational education for the role it has played in basic skill preparation.

CHAPTER 14

Enhancing the Image of Business Teachers

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An image is the composite of the beliefs, judgments, and values that are projected by a person or a group and perceived by others. Beliefs, judgments, and values are opinions or convictions that are not immediately susceptible to rigorous proof. As the beliefs, judgments, and values become internalized, they become attitudes, learned predispositions to react consistently in a given manner. Behaviors are the acting or reacting in an observable way under given circumstances.

The image of business teachers, then, is based upon the beliefs, judgments, and values that become permanently associated with the group and are projected in ways that are perceptible to others. In simple terms, the behaviors are manifestations of the internalized beliefs, judgments, and values called attitudes that become part of business teachers.

If business teachers want to improve their image, the way that others perceive them, they must be careful to project consistently certain types of attitudes and behaviors. Business teachers can enhance their image in the eyes of others if they successfully integrate and radiate positive attitudes and behaviors that relate to self, education, business education, and professionalism. By encouraging and reinforcing such attitudes and behaviors on a concerted basis, business teachers can project a better image of themselves than they have previously, and over time they can influence others' perceptions of them—in short, enhance the image of business teachers.

The following sections of this article suggest some of the attitudes and behaviors that business teachers can project to enhance their image. Discussions of complex psychological processes for projecting and changing attitudes and behaviors are not provided since they would exceed the scope of this article.

ATTITUDES AND BEHAVIORS RELATING TO SELF

Business teachers can enhance their image in the eyes of others by cultivating certain attitudes and behaviors that relate to the self. The self serves as a foundation upon which an enhanceable image is built.

The self-concept is an instinct that encourages a person to integrate all conscious and unconscious psychological processes into one meaningful whole. The self-concept is a composite of a person's many selves—bodily self, the sense that the body is different from things; self-identity, the sense of continuity through time; self-esteem, the sense of wanting to do things for oneself and take the credit; self-extension, the sense of possessions; self-image,

the sense of how others view the person; self-as-rational-coper, the sense that personal intellectual abilities are suitable for problem solving; and self-values, the sense that values are distinctive to the person, to name some generally recognized ones.

The self-concept is an integrated combination of perceptions and beliefs about oneself. Some of the perceptions and beliefs are accurate, but others are not. The self-concept is formed to satisfy the basic drives of a person; but once it is formed, it develops its own values and goals. The self-concept is organized for two primary purposes: to defend itself against criticism and to stimulate its own growth.

A direct outgrowth of the self-concept is the level of aspiration, which refers to the goals a person attempts to achieve. The degrees of happiness and life satisfaction are closely related to the difference between the actual accomplishments and the aspiration level.

The self-concept is an individual's image of what he or she is. The ideal self, on the other hand, is the image of what he or she would like to be. If a person does not live up to be the ideal self in a number of ways, then confusion and maladjustment occur. A person who claims that his or her self-concept and ideal self are virtually identical, however, may be unstable, with a strong need to be liked and accepted by others and a dislike of expressing emotions.

The healthy personality, then, is one with a self-concept that is close—but not too close—to the ideal self. Everyone, business teachers included, should strive to achieve a heathly self-concept and psychological well-being since they serve as the foundation, the wellspring, upon which an enhanceable image is built.

Given the idiosyncratic natures of self-concepts, business teachers and others should cultivate and encourage those personal characteristics that are positive and socially acceptable and discourage those that are negative and not socially acceptable. Accomplishing this, however, is a complex and ongoing process since both stability and change are hallmarks of personal development during adulthood. Nevertheless, the process of making accommodations to factors within the environment is essential and rewarding, and business teachers, like others, should strive to do so.

A system of values develops as part of the self-concept, but there will be differences in such systems from person to person and from circumstance to circumstance. The values that become a part of a person are influential in shaping that person's image. Generally those who enjoy favorable images have consistent and high values. Consistency allows others to predict with accuracy the behaviors that a person will use to respond to different situations. High values result in behaviors that represent virtuous conduct, actions that are beyond reproach. Both consistent and high values command respect and contribute to a positive image since neither can be criticized on many, if any, grounds. Therefore, it is in the best interest of business teachers and their collective image to strive toward consistent and high value systems.

When a person values himself or herself, then he or she becomes concerned about bodily image and strives for an appropriate appearance. Business

teachers who value themselves ought to strive for a professional appearance in modes of dress and in manners. Business teachers who have favorable images usually dress and behave as professional businesspersons do. They are clean, neat, and well groomed. Their professional dress reflects standards in the business community; it allows them to express their individual personalities through the clothes and accessories they select but in inoffensive and often somewhat conservative ways. Business teachers desiring image enhancement should also seek to replicate the exemplary manners of professionals as they interact with others. They ought to realize that good manners cost almost nothing but pay beneficial rewards; good manners increase the quality of life in the workplace, contribute positively to employee morale, embellish the image, and help the person advance.

A psychologically sound self-concept is the wellspring of image enhancement. Without a healthy self-concept, efforts toward image enhancement are apt to fail.

The self-concept, then, is the basis from which behaviors evolve. It is crucial to psychological well-being that every person develop a healthy self-concept, one that can be defended against criticism and can grow. A person's happiness and life satisfaction are determined to a significant degree by the difference between actual accomplishments and aspirations. When the actual self-concept and ideal self are similar but not identical, then a healthy self-concept develops. The self-concept can thrive when desirable personal characteristics are cultivated and when consistent and high values are attained. The self-concept also thrives when a person becomes concerned about bodily image and takes actions to improve appearance. A psychologically sound self-concept is the foundation upon which an enhanceable image is built.

ATTITUDES AND BEHAVIORS RELATING TO EDUCATION

Business teachers can enhance their image in the eyes of others by reinforcing certain attitudes and behaviors that relate to education. Such attitudes and behaviors contribute positively toward perceptions that upgrade their image.

Business teachers can enhance their image by intensifying personal characteristics that contribute to teaching effectiveness. Inexperienced teachers tend to be courteous, cooperative, trusting, friendly, good-natured, sincere, and kind. While these characteristics are desirable, they do not necessarily yield the best possible education for learners. As personal teaching styles evolve over the years, experienced teachers tend to be more careful, interesting, communicative, effective, confident, and forceful—characteristics that generally improve the quality of education provided for learners. If this developmental process is recognized and if it is positively supported by colleagues and administrators alike, the maturational period can be a relatively smooth one that yields rewarding professional and personal growth for teachers.

As educators, business teachers must be supportive of the lifelong learning process. They must acknowledge that education continues throughout life,

that not all of the valuable educational experiences occur in the formal classroom setting—in fact, a relatively small portion of them do. As a result, business educators ought to instill in their students a zeal for learning that will serve them well throughout their lifetimes inside and outside of classrooms. Whenever possible, teachers should use delivery systems in addition to formal classroom instruction. For business teachers cooperative education work experiences within the business community provide complementary delivery system that encourages learning while earning. Business teachers can also use student organizations to facilitate learning that can be generalized to other circumstances.

Teachers should exhibit firm commitments to continued study. Business teachers, like other educators and other types of professionals, ought to demonstrate commitment to continuing advanced study throughout their careers. Part of the advanced study for business teachers typically includes the completion of specialized coursework in business, education, and related fields to increase the breadth and depth of knowledges and skills. This may lead to the awarding of graduate degrees if certain requirements are met. In addition, commitments to learning can be demonstrated by keeping up to date on developments through the reading of professional literature and by attending profession-related meetings.

Business teachers should also be growing through participation in research activities. All business teachers can grow by conducting action research, informal experimentation in their own classrooms to determine the practical impact on educational outcomes of some variable factor. Even if some business educators are not prepared to conduct formal research studies themselves, they can still expand their understandings of the research process and resulting outcomes by participating in formal research studies along with their classes.

If educators are to be perceived favorably by others, all, including business teachers, must understand the learning process, instructional methods, and evaluation techniques. Without a firm foundation in these basic but critical areas, persons cannot provide the quality of education that the public expects and demands from teachers. Business educators should focus their study of both skill and nonskill learning as its relates to adolescents and adults; as business educators assume a greater role in grade and middle schools, they will need to better understand the learning process for children as well. Because of the diverse nature of business education, business teachers will continue to have need for specialized subject matter methods courses to augment general methods courses. It is also essential that business teachers study specialized subject matter evaluation techniques since many general purpose evaluation techniques require modification before use with business courses.

Teachers who recognize the potentials of all learners are among those who are favorably perceived by others. Business teachers should remember that their broad discipline of education for and about business is formulated to meet the varied needs of all learners at one or more points during their lifetimes. Business teachers must be committed to discovering the native

abilities of all learners as individuals and then providing instructional programs that meet their unique needs, desires, and potentials.

Teachers must be attuned to the special needs of those whom they serve. To enhance their image, business teachers must be sensitive to the differing needs of children, adolescents, and adults. They should develop educational programs that recognize and fulfill those varied needs. Content and methods of instruction ought to be tailored to specific audiences and to individuals within those audiences. Doing so will contribute positively to the image of business teachers as unsurpassed educators concerned about meeting the needs of their students.

Teachers must be able to organize the body of knowledge within their content area into concepts, units of study, and instructional activities. The task for business teachers is challenging because of the diverse nature of their discipline. Those teachers who are perceived by others as successful manage to allocate major concepts in a meaningful way among various classes with a modest amount of overlap. They further divide major concepts into manageable units of study that develop the content in a myriad of ways for the targeted learners. They devise sound instructional activities to develop, clarify, and reinforce the content.

Learning how to discipline gently but effectively is a key to teaching success and an important factor if business teachers desire to improve perceptions about themselves. Business teachers need to use introspection to uncover the feelings, sensitivities, and reactions they would have if they were students in their own classes and then formulate their disciplinary procedures accordingly. This would establish a climate of mutual respect within the classroom environment that would serve teachers well under even the most challenging circumstances. Discipline should be provided when necessary, but it should be inoffensively administered so that it does not interfere with subject matter mastery.

Since the primary function of teachers is to influence behaviors of their students, it appears logical that in addition to teaching them, teachers should also counsel them. As a consequence, business teachers should guide students in both professional and personal matters. Business educators should actively contribute to the career education process by helping students understand and select viable career options. Furthermore, when circumstances warrant, business teachers should assist students in resolving personal matters that impact classroom performance. In some cases teachers best serve the interests of their students by referring them to professionally trained counselors who are better prepared to assist in resolving major problems.

Teachers who lead by setting good examples for their students have positive images in the eyes of others. This behooves business teachers to serve as strong professional and personal role models for others. By drawing upon personal work experiences in occupations that relate to their teaching assignments, business teachers are perceived as model practitioners who provide relevant education and training for related careers. Students, then, strive to emulate the work-related characteristics that their teachers exhibit and reinforce. Students often model their own personal behaviors after those of influential

teachers; as a result, business teachers should strive to project such desirable personal characteristics as fairness, honesty, integrity, concern for others, and the like in hopes of instilling these virtues in others.

Business teachers, then, can enhance their image by encouraging certain attitudes and behaviors that relate to education. They can intensify personal characteristics that contribute to teaching effectiveness. They can develop commitment to the lifelong learning process for their students and for themselves. Business teachers need to understand the learning process, instructional methods, and evaluation techniques as well as the potentials and individual needs of those whom they serve—children, adolescents, and adults. Business teachers must be committed to organizing the discipline's body of knowledge into concepts, units of study, and instructional activities. They also must be committed to discipline that is gentle but effective in facilitating subject matter mastery. In addition, business teachers should be committed to counseling learners in professional and personal matters while also serving as professional and personal role models.

ATTITUDES AND BEHAVIORS RELATING TO BUSINESS EDUCATION

Business teachers can enhance their image in the eyes of others by cultivating certain attitudes and behaviors that relate to business education. These attitudes and behaviors support favorable perceptions that build the image of business teachers.

Before business educators can enhance their image, they must have general agreement about the nature of their discipline and its mission. Therefore, it is essential that all business educators develop positive attitudes and behaviors that reflect understanding of the mission of business education. "This We Believe About the Mission of Business Education," the 1977 statement of the Policies Commission for Business and Economic Education, identifies the four-part mission for business education.[1]

The first part requires that business teachers be committed to education for and about business. Education for business represents vocational education, education that prepares a select group of students for employment and careers in business-related occupations. Education about business represents general education, education that is offered so that all students as members of an increasingly complex society can be prepared with necessary survival competencies. While the former focuses around knowledges and skills to earn a livelihood, the latter focuses around knowledges and skills to ensure survival and functioning as contributing members of society.

The second part requires that business teachers be committed to a continuing educational program that prepares students to produce and distribute goods and services as workers, to use the results of production as consumers, and to make socioeconomics decisions as citizens. While business education can be interrupted, it also can be continued throughout the life span of a

[1] "This We Believe About the Mission of Business Education." *Policies Commission for Business and Economic Education, 1959-1979.* Reston, Va.: National Business Education Association, 1979. p. 37.

person. Because business education is a diverse discipline, its educational programs have varied formats and durations. The seeds of business education are sown during the preschool years and nourished at the elementary, middle, and high school levels. Fruition is reached as persons become independent of their caretakers and fulfill major roles as workers, consumers, and citizens, usually at the time of high school graduation or during or after further education at one- and two-year schools and colleges or four-year colleges and universities.

The third part requires that business teachers be committed to business career counseling activities. Business educators should acquaint students with information about careers in business-related occupations and help them match their interests, needs, and abilities with viable career opportunities.

The fourth part requires that business teachers be committed to helping nonbusiness students acquire the business-related knowledges and skills needed for success in their careers. Business educators can assist these students by developing their basic communications, human relations, and other business-related competencies.

The mission parts are not mutually exclusive; in fact, the parts are interrelated. This results in the complex and sometimes confusing nature of business education. It is sometimes difficult to define the exact boundaries of the discipline of business education, especially where the fulfilling of one mission part ends and where another begins. Even when there is general agreement that something is a part of business education, there may not always be complete agreement about its exact placement within the construct of business education since it may make contributions to the fulfillment of several different mission parts. Nevertheless, business teachers must be committed to the total construct of business education and its interrelated parts.

Business teachers can also enhance their image through mastery of the structure, content, theory, and methodology of their discipline. As the actions of business educators demonstrate a thorough understanding of their discipline and a prudent application of its knowledges and skills, explanations, and methods of instruction, they earn credibility and respect in the eyes of others. As the positive perceptions about business educators grow, their stature and image are enhanced.

Education for and about business is based in reality education, and business educators should be committed to that end. While business educators value academic education for themselves and their students, they also value real-world education for themselves and their students. By combining the best elements of both types of education, business educators temper their own theoretical knowledges and skills with practical work experiences in the business world. This process gives them credibility in the eyes of others as practitioners in business-related occupations and orients them toward instruction that realistically mirrors conditions in the business world. Paralleling this, business educators encourage their own students, especially those who are involved in vocational programs, to complement classroom instruction with on-the-job learning, often through cooperative work experi-

ence programs. By understanding the value of and by providing realistic education for and about business, business teachers develop a broad base of support that contributes to positive perceptions of them and their discipline.

Business teachers, then, earn the respect of students, parents, colleagues, school administrators, the business community, and the public in general as they better understand the nature of business education and implement realistic programs of education for and about business. By mastering the component parts of their discipline in academic and real world settings, business educators are able to offer quality education for and about business that meets the varied needs of those whom they serve. Business teachers contribute to their image in desirable ways when they offer and upgrade sound programs of business education that fulfill the four-part mission of business education.

ATTITUDES AND BEHAVIORS RELATING TO PROFESSIONALISM

Business teachers can enhance their image in the eyes of others by striving for attitudes and behaviors that relate to professionalism. Professionalism attitudes and behaviors are those that contribute in a positive manner to the image of the profession and its practitioners.

Various professions share a number of common characteristics. They have unique bodies of knowledge that are assimilated over relatively long periods of time, in part by continuing learning throughout professional employment. Professions exist for the mutual benefit of their members and those they serve. Professions disseminate information to their practitioners, promote the welfare of the profession, and facilitate change, often through actions of related professional organizations. Admission to professions is usually regulated by education and certification requirements. Some professions also have codes of ethics that regulate the actions of members.

Business education has its own distinctive body of knowledge that is mastered over a relatively long period of time and that needs to be reviewed throughout the professional years. It is a profession organized to benefit those who provide education for and about business and those whom it serves. The business education profession informs its members, safeguards the welfare of the discipline, and facilitates change through the efforts of individuals and groups, including professional organizations, at the local, state, regional, and national levels. The right to practice business education is earned through the completion of education and certification requirements. While the business education profession does not have a written code of ethics, its practitioners encourage attitudes and behaviors that benefit the welfare of the profession.

Business teachers are encouraged to demonstrate their commitments to the profession through excellence in teaching, growth in learning, and service to the profession. Excellence in teaching is rooted in the idea that students have needs that can be met by dedicated teachers who strongly believe in the value of education for and about business. Such teachers work diligently and consistently to meet those needs in better ways than they have been met before. Growth in learning is rooted in the idea that learning is a lifelong

process. It usually manifests itself as in-depth continuing study and research after minimum requirements for entrance into the profession have been achieved. Service to the profession is rooted in the idea that professionals have obligations to themselves, to their profession, and to those whom they serve. As a result, professional business educators actively contribute to their profession and its profession-related organizations in many ways that collectively enhance the image of business teachers.

Business educators can make professional contributions in countless ways since every business teacher possesses special knowledges, skills, and abilities that can be creatively used for the betterment of the profession. Some serve on committees as workers; some share their insights as speakers; some expand and refine the discipline as researchers; some contribute to the professional literature as authors; some guide the profession as leaders; some modify the status quo as change agents.

Regardless of the forms of service that business teachers choose as manifestations of their professional contributions, they also respect the varied contributions of other members of the profession. Professionals recognize the value of all sincere efforts toward the betterment of the profession, and they are tolerant of points of view that they themselves do not express. In cases where philosophical or interpretive differences exist, professionals may agree to disagree; but they do so without rancor.

Business educators can support their profession and upgrade its influence by understanding the roles of local, state, and national educational governing bodies and by using political activities to endorse, refine, and change education-related policies. Business teachers should not be bashful about communicating with local or state board of education members, state or national legislators, and bureaucratic decision makers. Not to engage in political activisim is to encourage problems by letting special interest groups unduly influence decision makers. Business educators should provide credible information to members of governing bodies, information that influences their decisions and shapes policies that are crucial to the welfare of the discipline and those impacted by it. As the visibility of business educators in the political arena increases, more and more decision makers will seek them out as valuable resource persons. As a direct result, business educators will have increasing influence on the major decisions that affect business education, its practitioners, and those whom it serves.

Business teachers influence their image in positive ways as their actions manifest professionalism in its varied forms. But perhaps the pinnacle of professionalism is the ability to place the welfare of the profession as a whole before that of self-interests within the profession. When business educators mature professionally to the point that they are at least as committed—preferably more committed—to the broad and diverse discipline of business education than to their own personal or specialized interests within business education, then they have truly achieved influential professional status. They will then have the necessary self-confidence and respect from others to promote all aspects of business education with credibility and integrity. They will have the power to shape and refine the image of business teachers and

the wherewithal to promote the welfare of the profession.

Business teachers, then, can enhance their image by demonstrating professionalism through quality teaching, growth in learning, and active participation in professional activities. In addition to contributing to their profession, business teachers should respect the contributions of other professionals. Business teachers should accept responsibility for endorsing, refining, and changing education-related policies impacting their discipline through appropriate political activity. Those business teachers who have the respect and credibility to promote all facets of business education are those who place the welfare of the discipline before their self-interests within the discipline.

CONCLUSION

By projecting attitudes and behaviors such as those mentioned in the preceding sections of this article, business teachers can enhance their image in the eyes of others. Perceptions about business teachers will become more favorable than before if business teachers successfully integrate and project positive attitudes and behaviors that relate to self, education, business education, and professionalism. As business teachers acknowledge the importance of their image and as they collectively strive in a conscientious manner to project as many desirable attitudes and behaviors as possible, they will be rewarded with an enhanced image.

CHAPTER 15

Implications of Change for Effective Teaching

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The final chapter of a yearbook serves a unique role in business education literature. It is informative, as have been the previous chapters; it is also intended to be integrative, combining the themes of all previous chapters in a meaningful way. The subject of this chapter, business teacher training, is in itself integrative, for it is precisely in the development of today's and tomorrow's business teachers that we enable business education to respond to a changing world.

The chapter begins with a capsule look at the status of business teacher education today. It then offers several suggestions for changes in the way in which we train business teachers to aid in meeting the demands of a changing world. The chapter concludes with a discussion of those factors both within and without our control as we deal with the challenges that we face.

BUSINESS TEACHER EDUCATION TODAY

B. June Schmidt's 1983-84 NABTE survey shows, to no one's surprise, that

> Once again, the decline in the number of institutions offering business teacher education continues. The decrease in NABTE membership over the four-year period has been 13 percent, from 305 to 265 institutions. However, the rate of decline seems to be decreasing. Further, only 1 institution reported its program as having been discontinued in 1983-84; whereas, 33 had been reported as discontinued in the previous three years.[1]

Schmidt also reports that the average number of baccalaureate degrees granted per responding NABTE institution in 1983-84 was 9.7, compared to 12.5 in 1980-81.[2] Rough estimation indicates that 150 responding institutions graduated 3 fewer graduates each, resulting in a decrease of 450 new business teachers over the period.

A related study of NABTE institution methods courses, one conducted by Rex R. Mahlman, reveals that "schools with a larger number of business teacher education majors tend to have more business methods courses in their curriculum."[3] Furthermore, the schools with fewer methods courses omit such

[1]Schmidt, B. June. "Business Education in the United States: 1983-84 NABTE Survey Results." *NABTE Review*: 1985, p. 90.

[2]*Ibid.*

[3]Mahlman, Rex R. "A Study of the Content of Business Methods Courses Offered in NABTE Colleges and Universities." *NABTE Review*: 1985, p. 84.

topics as entrepreneurship, adult education, career education, advisory committees, business English/communications, business mathematics, and consumer education.[4]

The implications of this brief glimpse into business teacher education today are clear: we are providing fewer business teachers and, by necessity of numbers, they are receiving less than ideal preparation. The challenge of responding to change, given this scenario, is a strong challenge, but one that is by no means an insurmountable task.

CHANGES NEEDED IN BUSINESS TEACHER EDUCATION

The suggested changes in business teacher education programs that are presented here are grouped, for convenience, into three categories: changes in goals; changes in content; changes in structure. To some, these are changes already made; to others, these are changes already in progress; to yet others, these are changes to be considered.

Changes in goals. Historically, our goal in business teacher education has been to prepare secondary school business education teachers. In this changing world, such a goal is inappropriate and restrictive, for our secondary school enrollments are declining and the opportunities for business teacher education graduates are broader. Our primary goal now must change to that of preparing business teachers for positions in all educational settings.

The word "all" in the term "all educational settings" is intended to be a broad one, for it includes *all* levels of schools and *all* other settings in which business teaching skills are required. Our graduates should be prepared to teach business skills and concepts in such levels of school as the elementary school, the junior high school, the senior high school, the proprietary school, and the public and private two-year or four-year college. Our graduates should be prepared to teach business skills and concepts in such other settings as business and industry, prisons, Indian reservations, government-sponsored programs, and mass media.

Adoption of this primary goal brings about the realization of two important sub-goals. The first is the goal of preparing teachers of students, rather than teachers of subjects. A diversity of educational settings necessitates that the teacher is able to teach individuals ranging in age from 5 or 6 to "upper-level" senior citizen. To be able to teach effectively, given this diversity of ages, one must be prepared to individualize instruction. Individualization makes the student the center of the teaching universe, rather than placing a course such as keyboarding or accounting as the focal point. Learning to individualize in one's teaching is one helpful way to cope with a changing world. The use of individualization—by both business teachers and business teacher educators—should start us on the road to dealing with any person in any subject area, so as people and content change, so can we.

The second sub-goal is that of preparing business teacher education graduates to be mobile in their own careers. To prepare a "high school teacher

[4] *Ibid.*

only" can handicap a graduate, for he or she becomes locked into a career. The graduate is a dinosaur, who will soon become extinct. To prepare a teacher of business subjects at all levels and in all settings gives the graduate an opportunity for a lateral (and a vertical) transfer of skills. He or she is a butterfly, capable of transforming shape as needs of society and the business world change. An industry training option or component of a business teacher education program can also serve as a powerful recruiting tool for our programs to attract those students who want to teach but cannot "afford" to become secondary school teachers. We have always claimed that business teacher education programs prepare students for dual careers—the classroom world or the world of business. How often have you said, "If there's no teaching job or if I want to leave teaching, there's always the business world." It's time to put this claim into formal perspective as a true program goal, a goal to meet the demands of a changing world.

Changes in content. The obvious changes needed in our business teacher education programs relate to content. Every one of us is aware of what "new" concepts and skills need to be incorporated into the business teacher education program. To restate these topics item by item will only be repetitive of other lists. Perhaps the most direct and concise way to summarize what changes are needed in the content of business teacher education programs is to say that such changes must be made that will enable the business teacher to deal with all of the topics covered in the chapter headings of this yearbook. Thus, the business teacher must be trained to understand the changes in our workplace and work force and so forth, including learning how to act to improve the image of the business education teacher. It is difficult to imagine that anyone would differ with such a list of competencies for the business teacher.

Assume for a moment, however, that this list was agreed upon by all of us in business teacher education. This agreement then implies the development of a standard business teacher education curriculum. The present diversity of content in business teacher education programs is a known fact, documented by research such as that found in Volume 12 (1985) of the *NBATE Review*. Our programs differ in the number of courses required, the weeks of student teaching, and the types of methods courses offered, among many other factors. It seems that if we are to meet the challenges of change in our teacher education programs that there must be an agreed-upon content in all of our programs. What should be contained in these programs is a matter of much recent discussion and debate. Who should determine the content is an unresolved issue. Who should monitor the inclusion of this content is yet another issue to be decided. The point may very well be that the era of strong, entrepreneurial, individualistic business teacher education programs is over if we are to prepare effective business teachers for the future.

Changes in structure. Business teacher education programs have traditionally been composed of four parts: liberal arts courses, business content courses, professional education courses, and field experiences (the latter including student teaching). The first three parts listed have been held, traditionally, in classrooms on college campuses. Programs have been

approved by individual states, with the influence of regional and/or national accrediting agencies. Changes are needed in the structure of this traditional model, changes that can be categorized as those at the micro level and those at the macro level.

Micro, as used here, refers to the individual business teacher education program. The basic change needed at the micro level is a movement away from the college classroom as the major medium for learning. The world of business and the other educational settings must become our classrooms for reasons both academic and financial. The outside worlds show the changes as they occur; the outside worlds allow us to maintain programs with small enrollments yet offer a comprehensive education.

Internships in industries and in schools offer one major change in the structure of our programs, a change that will allow business teachers to keep up with the evolving world. A preservice internship, for the undergraduate business teacher education major in his/her sophomore year, will be a fine opportunity for that future teacher to observe and/or participate in business education in all settings. Many of our current business teacher education programs contain a preservice internship component, but it is often restricted to time spent in high schools only. Observation time must include other levels of schools, as well as significant time in business and industry. In a similar vein, the second preservice internship, more commonly called student teaching, need not be restricted to a high school setting. The student teacher's experience can be divided among two or more educational settings.

A second use of the outside worlds, particularly that of business and industry, is as a learning laboratory for current office technology. This use can be part of the training of new business teachers and also serve as an inservice laboratory for current classroom teachers. There is a practical limit to how much capital equipment we can buy for our college classrooms. There is the incredible time lag experienced by educational institutions in trying to keep pace with current office technology. Why not use industry as our classrooms? Teaching methods in industry can range from standard classroom presentations to hands-on, individualized learning kits to discussion groups to shadowing a machine operator to paid and/or unpaid internships. Any teaching method that works in the conventional classroom (plus others) can work in the office environment.

It was mentioned earlier that industry could serve as a learning laboratory for both preservice and inservice purposes. The inservice component is another of those areas of business teacher education in which we have so often said "we ought to do something"; yet we do little. Aside from a few scattered programs by specific universities and associations, there is a minimal amount of serious inservice, in-the-office training for our practicing teachers. Imagine a secondary school business education department arranging with a local business for a paid rotation experience for all of the members of the department! Each teacher in the department would, in turn, spend five months away from the classroom, working in that firm. The work could be learning the uses of new technology or applying one's teaching skills to training the workers in that firm. This type of arrangement, in and of itself, could be

the key way to permit our business teachers to deal with change. It is not a Band-Aid remedy to correct a shortfall of knowledge, but a long-term plan to keep up with continuous change.

Macro, as used here, refers to changes in business teacher education structure overall. A macro change suggested earlier in this chapter is that of a standard national business teacher education curriculum. However, in this section, we are dealing with structure, so the change about to be suggested is of a very different nature. Based on the philosophy that a good article causes the reader to react, here is an idea that is certain to bring about a reaction. Read the list that follows.

Region	*College*
EBEA	New York University
SBEA	University of Georgia
N-CBEA	Northern Illinois University
M-PBEA	Texas Tech University
WBEA	San Jose State University

What if each of the five universities in the list were the *only* colleges in the nation permitted to certify business education teachers? Each could be built in enrollment to strong, viable programs. Each could have its curriculum standardized and monitored by the National Business Education Association. All other business teacher education programs in the country—the other 260 NABTE schools plus the countless other non-NABTE schools—would be phased out over the next four years. Teaching certificates would be issued by the federal government as a rubber stamping process, based on recommendation for certification by the NBEA. Any teacher of business in any educational setting—business, industry, private college, and so forth—would need to hold a teaching certificate earned in this process to become employed.

If this idea is less than ideal to you, try another. How about one approved business teacher education institution per state? The college would have to be a NABTE member, which unfortunately would eliminate Alaska and Nevada, but would include the District of Columbia and Puerto Rico. The requirement for NABTE membership is essential, so that the program would have a standard NABTE-determined curriculum and be monitored by that Association. All teachers who graduate from these approved schools would be certified through NABTE, with the same use of certification to be employed as described in the NBEA model. Ideally, the NABTE institution chosen would be a private college, since curriculum change can be accomplished far more rapidly than in a public college or university. In fact, the more one thinks about this idea, perhaps the NABTE thrust would be better replaced by the Association of Independent Colleges and Schools (AICS) and all business teacher education done through AICS institutions. After all, wasn't that how it was in the early days?

A change is needed in the structure of business teacher education, for we cannot keep up with the effective teaching required for dealing with change if we maintain the independent, hit-or-miss curriculums that are present

today. The form of structural change needs to be very carefully reasoned out; the leadership role of NBEA, NABTE, and AICS is crucial.

CONTROL OF CHANGE

Change is inevitable. Its existence is completely beyond our control. The fact that there is change and will be change is as sure as the revolutions of the earth—it is going to happen. What is controllable is how we deal with this change and how we anticipate its nature.

We can, for example, control the changing workplace, to an extent, by taking a leadership role in on-the-job instruction in business and industry. We can show the workers in the office how to do the job most efficiently. While, on the other hand, we cannot directly affect social, economic, and demographic trends, we can educate the citizenry of the United States to be able to watch for these trends and understand them. Economic education, one that business education should take a strong role in, will provide our country with a well-informed populace.

We can certainly prepare students for career change by developing students with sharp problem-solving skills and the knack of learning how to learn. And we can teach our students those human relations skills that are necessary for improved interpersonal relationships.

The integration of the computer into all phases of elementary, secondary, and higher education is very much within the control of business education. We, as a group, have so often lagged behind in this area, letting "the other guy or gal" do it. Indeed, there are probably some among us who are still teaching the rotary calculator, while math, science, and other departments have taken over the computer instruction that should be ours. In the information processing area, we have frequently absolved ourselves of responsibility for leading students through change.

The examples cited in the three previous paragraphs point to a common conclusion, one well expressed by Margaret Johnson in the 1985 NBEA Yearbook issue: "Business educators should be managers of change and not victims of change."[5] This quotation does not say that we should determine the nature of change, but that we should actively administer change. The alternative to active management is to let change rule us, a nonproductive lack of effort that can only end by putting us "out of business."

Active administration of change has itself an underlying assumption: that we know how to do so! Knowing how to do so—how to manage change and how to teach others to manage change—falls squarely on the shoulders of the business teacher educators of this country. We are responsible for the effective teaching (or lack thereof) that will occur in the future. We are responsible for the future of business education. We must see to it that there is an appropriate "Business Education for a Changing World."

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[5]Johnson, Margaret H. "Implications of Information Processing for Four-Year Collegiate Programs." *Information Processing in the Business Education Curriculum.* 1985 Yearbook Issue. Reston, Va.: National Business Education Association, 1985. Chapter 4, p. 24.